Silent Reading

A Handbook for Teachers

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TO

ERNEST HORN

IN GRATEFUL ACKNOWLEDGEMENT
OF OUR INDEBTEDNESS TO HIM

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PREFACE

Much experience in high-school, normal-college, and university classrooms has convinced the authors that the following statements may be verified in any school:

1. The chief cause of failure among first and second-year students is their inability to employ effective methods of study.
2. By using proper methods of training it is possible to improve the study habits of many such students within a short time.

During the last few years there has been much investigation designed to discover the best method of reading effectively, because the ability to do that lies at the bottom of how to study. Such investigations have been concerned with the physiological and psychological aspects of the problem, as well as with the pedagogical principles. As a result of this increased interest in the subject, administrative officers in city school systems are more closely supervising the methods employed to teach reading, and they are also more closely scrutinizing the results obtained. Reading circle boards are also interesting themselves in literature that treats of the teaching of reading.

Because the reports of experiments in this field of education are usually only to be found in widely scat-

tered sources, and when found prove to be of a highly technical nature, largely statistical, it is difficult for the average teacher to obtain or to use the conclusions of investigators. To remedy this situation by summarizing all that is best and most practical in the many modern investigations, and to make the findings available to teachers everywhere, has prompted the authors to undertake this work.

The authors are especially indebted to Dr. Ernest Horn, Professor of Education and Director of the Elementary Experimental School at the State University of Iowa for the classification of silent-reading problems under four headings: Speed, Comprehension, Organization, and Retention. It was his vision of the scope of the field of reading, and his enthusiasm and encouragement that made this book a possibility.

They are also indebted to Dr. Gerald A. Yoakam, Director of Teacher Training in the State Normal School at Kearney, Nebraska, for the use of some of his data, and to Miss Kate Kelly, Primary Supervisor of the Des Moines Public Schools, for reading the manuscript and offering constructive criticisms. To many heads of school systems in Iowa who permitted the carrying out of experiments the authors are grateful, and especially so to Misses Post, Swemm, and Starr, principals of schools in Cedar Rapids, Iowa.

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PART ONE

CHAPTER I

SILENT OR ORAL READING

Importance of silent reading. The importance of teaching pupils to read effectively can scarcely be overestimated, since reading is the key to all subject-matter. The pupil's progress in school depends largely upon the speed and accuracy with which he can get the thought from the printed page. We say that he is good in geography, history, science, or mathematics if he can quickly grasp the important ideas from a mass of details, and if he can organize and retain those essentials.

Judging from the time allotment accorded reading in the grades, it is evident that the importance of this subject has been recognized. In fact, an examination of courses of study shows that in the primary grades approximately 70 per cent of the time has been devoted to the teaching of reading.

However, very little training in silent reading has been given even in the intermediate and grammar grades, notwithstanding the fact that the subject-matter is becoming more informational and definitely organized, and that success in its mastery demands specific training in how to study. Until recently the work

of the teacher has usually focused on oral rather than on silent reading; on expression rather than on getting, organizing, and retaining ideas. The question naturally arises, can this emphasis on oral reading be justified?

Drawbacks of the oral-reading method. Speed in reading necessitates wide perception-units, that is, seeing groups of words instead of single words. Much oral reading for beginners tends to make the child word conscious and consequently develops motor habits of narrow eye-span. Dr. Schmidt says "the rate of oral reading, although subject to considerable variation, is confined within relatively narrow limits because of its dependence upon the physiological mechanism involved in vocalization."[1]

A pupil's ability to read may well be measured by the number of thought units which he is able to recognize in a given time. Hence, flash-card exercises and other silent-reading devices which emphasize getting the idea are really of intrinsic value. They tend to develop good motor habits as well as attentive, purposeful reading habits. We have too long been reading "from the nose down" rather than "from the nose up."

Those who maintain that oral reading is the natural method for beginners believe that the lip-movements and inner speech of silent reading are reflex actions,

[1]Schmidt, W. A. "An experimental study in the psychology of reading." *Supplementary Educational Monograph*, Vol. 1, No. 2, University of Chicago Press, Chicago, 1917.

the physiological tendency to which is inherited. Quantz believes that inner speech or articulation is an inherited tendency. He says "it is not second nature, but inherently first nature; not something to be unlearned, but to be outgrown."[1] Other investigators maintain that the lip-movements and articulation of silent reading are acquired. In O'Brien's judgment, the explanation of the tendency to articulate when reading is to be found "not in the list of inherited tendencies or connate reflexes, but in the acquired habits of the individual."[2] According to him, the tendency to lip-movement and vocalization is built up by the methods of teaching reading.

Pintner does not believe that articulation is necessary, even though it may be a universal habit. As a result of one of his experiments he concludes "that articulation during the reading process is a habit which is not necessary for that purpose, that reading without articulation sacrifices nothing in the process of thought-getting," and "that practice in reading without articulation tends to reduce the time involved in the process."[3] Schmidt further confirms the opinion of Pintner when he says:

It is quite possible, too, that if training in oral reading were discontinued at an early stage, and training

[1]Quantz, J. O. "Problems in the psychology of reading." *Psychological Review: Monograph Supplement*, Vol. 2, No. 1, (December) 1897.

[2]O'Brien, John A. *Silent Reading.* The Macmillan Company, New York City, 1921.

[3]Pintner, Rudolph. "Inner speech during silent reading." *Psychological Review*, Vol. 20, (January) 1915.

in rapid silent reading were stressed, the tendencies toward inner speech might be greatly reduced and visualization cultivated, at least in part. As a matter of fact, we appear to have the ability to take in all kinds of situations visually without speech accompaniments.[1]

The problem for the learner. Thus it seems that the vital problem for the learner is to recognize the symbol and immediately to associate it with that for which it stands. For example, the teacher writes the word "run" on the blackboard. Her chief concern is that the child may associate the symbol "run" with the activity; the word need not be spoken. Why should it be, since speaking it requires time and is an unnecessary step? The child is capable of recognizing many situations both in and out of school to which he makes no vocal response.

But why should 90 per cent of the teacher's time in the reading period be spent in teaching children to read orally, when 90 per cent of their reading must necessarily be silent both in school and out? Is it fair to have the child acquire attitudes toward a subject and to form habits and develop skill for which he will have little use either in school or out of it? The habits formed in oral reading may be a positive hindrance to the acquirement of speed and comprehension in silent reading. This contention is confirmed by Dearborn, who says that "the effect of articulating is to decrease ordinarily the span of

[1]Schmidt, W. A. "An experimental study in the psychology of reading." *Supplementary Educational Monograph*, Vol. 1, No. 2, University of Chicago Press, Chicago, 1917.

attention.'"[1] and consequently retard the rate of reading. In general we have eliminated oral spelling from the school program, not only for psychological reasons but also for sociological ones. We say it does not function in life's activities. Why then should we discriminate in favor of oral reading and retain it, unless there is a need for it as such.

Values of oral reading. One should not infer, however, that oral reading has no place on the school program. It is certainly of importance. Few arts are more prized than that of being able to read and to speak with clear enunciation, distinct articulation, correct pronunciation, and pleasing cadence. But would not courses in literature, oral English, public speaking and dramatics offer ideal opportunities for training in this art? And why should we not stress training in pronunciation, enunciation, articulation, and the other factors of good speech, in all schoolroom activities? It is not enough to drill on these things for twenty minutes a day in one class, and neglect them in all others.

Oral rendition of literature. Good oral rendition greatly enhances the charm of certain poems and prose passages and also gives them greater depth of meaning. Indeed, one does not recognize the æsthetic appeal and the emotional significance of much choice literature until one reads it aloud. Such values as

[1]Dearborn, W. F. "The psychology of reading." *Columbia University Contributions to Philosophy and Psychology,* Vol. 14, No. 1, 1906.

are inherent in word imagery, euphony, meter, and tone cannot have the fullest significance nor be fully appreciated unless the selections are read well orally, as the following selections show.

He clasps the crag with hooked hands;
Close to the sun in lonely lands,
Ring'd with the azure world, he stands.

The wrinkled sea beneath him crawls;
He watches from his mountain walls,
And like a thunderbolt he falls.

TENNYSON: *The Eagle.*

For the moon never beams without bringing me dreams
Of the beautiful Annabel Lee;
And the stars never rise but I see the bright eyes
Of the beautiful Annabel Lee;
And so, all the night-tide, I lie down by the side
Of my darling, my darling, my life and my bride,
In her sepulchre there by the sea —
In her tomb by the side of the sea.

POE: *Annabel Lee.*

On Linden, when the sun was low,
All bloodless lay the untrodden snow,
And dark as winter was the flow
Of Iser, rolling rapidly.

But Linden saw another sight,
When the drum beat, at dead of night,
Commanding fires of death to light
The darkness of her scenery.

By torch and trumpet fast array'd,
Each horseman drew his battle blade,
And furious every charger neigh'd
To join the dreadful revelry.

Then shook the hills, with thunder riven,
Then rushed the steed to battle driven,
And louder than the bolts of heaven
Far flashed the red artillery.

CAMPBELL: *Hohenlinden.*

I impeach Warren Hastings of high crimes and misdemeanors. I impeach him in the name of the Commons of Great Britain in Parliament assembled, whose parliamentary trust he has betrayed. I impeach him in the name of all the Commons of Great Britain, whose national character he has dishonored. I impeach him in the name of the people of India, whose laws, rights, and liberties he has subverted, whose properties he has destroyed, whose country he has laid waste and desolate. I impeach him in the name and by virtue of those eternal laws of justice which he has violated. I impeach him in the name of human nature itself, which he has cruelly outraged, injured, and oppressed in both sexes, in every age, rank, situation, and condition of life.

BURKE: *Impeachment of Warren Hastings.*

It is evident that the ability to read well orally has an important value that should be made available to every child. Any plan or method which gives training in correct pronunciation, distinct articulation, clear enunciation, and the pleasing, effective use of one's language certainly performs a valuable service.

To be appreciated, the best literature must be read well orally. Rhythm and word imagery demand it, as the above selections show. The famous passages of literature must be rendered orally if one is to feel the passion of the author or appreciate the grandeur of his ideas. The oral reading of such selections gives the child a keen sense of enjoyment, it enables him to express his æsthetic emotions. Training the voice to express man's finer feelings is an important aim of work in oral reading. Although most of the reading period is devoted to oral reading, the great majority of pupils who graduate from the elementary and high schools cannot read well orally because they have not learned to think and feel with the author.

Methods of teaching oral reading. The chief cause of this unsatisfactory condition is undoubtedly the method of presenting the reading material. At present there are two outstanding methods of teaching oral reading, the principles of which are diametrically opposed. Adherents of the old school believe that an appreciation of poetry is best developed by the detailed analysis of a few choice poems. They argue that such treatment gives the student a working method and thus develops an interpretative and appreciative attitude toward good literature. Adherents of the new school strongly condemn such procedure. They argue that the appreciation of poetry comes from extensive reading carried on as a leisure activity for the mere joy to be found in it.

In the first instance, we find that in order to insure comprehension a poem is studied line by line, analyzed, and dissected until its unity is destroyed and the selection is robbed of all its beauty. As a consequence pupils often come to dislike poetry and seldom read it either orally or silently except as a required task. In the second instance, the radical opponents of the former method claim that appreciation comes not from the intensive study of a few poems, but from reading much poetry. They take for granted that pupils are capable of comprehending a poem and interpreting it without other study than that furnished by a leisurely oral reading.

A combination method. Possibly these methods are extreme. Critics agree that the first requires overanalysis, that the second does not require sufficient study to insure apprehension, comprehension, and appreciation. It is therefore likely that the best results might be obtained by combining the commendable features of both. The teacher should use her judgment in selecting suitable methods.

Although it would not be desirable to impose an extreme form of the first method upon the pupils, yet poetry must be understood to be enjoyed, and consequently some analysis is necessary. It is surely possible to ask such questions about a poem as will aid in understanding it, and at the same time enhance its beauty for the reader. Take, for example, the little stanza:

Oh, the sunshine told the bluebird,
And the bluebird told the brook,
That the dandelions were peeping
In the woodland's sheltered nook.

Have the pupils read this stanza and try to answer the question: "What season of the year is implied by these lines?" The answers will indicate whether or not the pupils understand what they have read. Surely such a question does not rob the poem of its beauty!

Would the beauty of the following stanza be at all marred by asking the pupils to read it silently and then try to answer the question, "What is the name of the prettiest bridge?"

There are bridges on the rivers,
As pretty as you please;
But the bow that bridges heaven,
And overtops the trees,
And builds a road from earth to sky,
Is prettier far than these.

Have the pupils silently read the following poem, "The Secret," then try to answer these questions. What was the secret? How do you suppose the tree told it?

We have a secret, just we three,
The robin and I and the sweet cherry tree;
The bird told the tree, and the tree told me,
And nobody knows it but just we three.

But of course the robin knows it best,
Because he built,—I shan't tell the rest;
And laid the four little—somethings—in it.
I'm afraid I shall tell it every minute.'

The teacher's aim should be to test the children's comprehension of a poem, not by having them give a detailed analysis of it, but by requiring answers to carefully worded questions that demand an understanding and appreciation of the chief thoughts and sentiments expressed in the selection.

Other reasons for teaching oral reading. Other arguments for emphasizing oral reading have been advanced, but they are hardly justified by recent scientific investigations. For example, some teachers claim that since so many pupils are of the auditory-image type it is absolutely necessary that they read aloud in order to insure a high degree of comprehension. However, recent and thoroughgoing scientific experiments make such assertions untenable. Bryan[1] subjected more than 600 school children to forty-one different tests in an effort to determine the type of imagery most dominant. After carefully interpreting his results, he decided that only five or ten of the pupils tested showed extreme eye-mindedness or ear-mindedness. Even such extreme cases are not handicapped by the kind of presentation, whether it be to the eye or to the ear, because each pupil quickly shifts to his particular image type.

[1]Bryan, W. L. "Eye and ear-mindedness." *Proceedings of the National Education Association,* 1893.

Betts, who has made one of the most thorough investigations of both voluntary and spontaneous use of imagery in thinking, concludes:

> We shall have to insist that imagery, apart from inner speech, not only does not constitute the major part of the thought stream, but also that the thought stream may and does go on efficiently at times without any imagery whatever in it. And this absence of imagery does not mean mental poverty, but only mental selection. At this point, as at all others, the mind is but following the fundamental law of economy, and using the elements which will most efficiently do its work with the least effort.[1]

Many teachers insist that one of the best means of testing a pupil's comprehension of a paragraph is to have him read it orally. They contend that the child's oral expression is a reliable index of his ability to interpret the thought. However, such statements cannot go unchallenged. As a matter of fact, some pupils read with considerable fluency and nearly perfect expression, but fail decidedly when tested for interpretation. This is shown not only in the grades, but even in colleges where students often fluently read passages in some foreign language, the content of which they are unable to to translate.

Criticism of reading methods. At present there are several outstanding criticisms of the methods of teaching reading now most generally used. There has been no clear-cut idea of what should be included in

[1]Betts, George H. "The distribution and function of mental imagery." *Columbia University Contributions to Education*, No. 26. 1909.

the subject; consequently, definition of aim has not been possible. We have too long suffered overlapping and confusion of subject-matter. An analysis of courses of study shows that the following subjects are included under the heading "reading": Literature, oral English, speech defects, elocution, dramatization, pageantry, oral reading, and silent reading. We cannot expect large returns to reward our efforts in teaching reading until we realize that each of the above subjects has its own definite objectives and methods upon which we must focus attention. We have failed distinctly to recognize the fields of oral and silent reading, and we have been unaware that training for efficiency in oral reading may not develop efficiency in silent reading.

A suggested improvement. The authors maintain that silent reading is not a new study to be added to the curriculum, necessarily requiring the reading of some particular type of material. Rather, they believe it is a means by which pupils may be taught how to study. Correct methods should be applied to every lesson which the pupil is required to read silently. The possibilities of silent reading are important enough to warrant its being given an emphasis equal to that laid upon oral reading. A pupil who can give the main ideas of a selection in a well-organized form, after a single reading of it, is a good reader; the silent-reading period should aim to develop exactly this power in studying. However, if this skill is to

be acquired, the teacher must keep in mind the four fundamental aims of silent reading — speed, comprehension, organization, and retention.

Chief aims of silent reading. The slow reader is continually handicapped. Every year increases the reading demands made on school children and adults. If the rate of silent reading can be increased, while the degree of comprehension remains the same, what a tremendous advantage will be gained!

The ability to comprehend what one reads is more important, however, than the ability to read rapidly. The ability to cover many pages or to see many words in a short time profits the reader but little unless he understands the content. Comprehension is fundamental to all study; to the degree a pupil comprehends, to that degree he makes progress. All work, whether in oral or silent reading, should stress comprehension.

The ability to organize what one reads is the third aim in developing a method of teaching silent reading. It is of great importance. A pupil who can distinguish between points of major and minor importance, who has acquired the ability to organize the material he reads, who can outline and summarize efficiently, has mastered one of the essential qualifications demanded of a good reader.

Helping pupils acquire the ability to retain what they read is also of the utmost importance, because much of the knowledge acquired today in school is

of value only in the future. In fact, the ability to think soundly and to reason depends on how well one can retain certain fundamental ideas. During the silent-reading exercises teachers should stress organization, association, routine reviews, and all other factors that aid in developing a good memory.

SUMMARY

1. Efficient training in silent reading is of the utmost importance because most of the reading done in daily life is silent.
2. Oral reading is important because it can be used to teach pronunciation, articulation, and enunciation, as well as the effective rendition of the finer thoughts and feelings of the race as expressed in literature. It also aids in the appreciation of poetry and prose masterpieces.
3. The methods used for teaching oral reading have generally failed to obtain the desired results. Comprehension should be tested by carefully worded questions, the answers to which require an understanding and appreciation of the thought and feeling which the selection conveys.
4. Teachers have overlooked the importance of silent reading as a means of training pupils how to study.
5. If a method of study is to be developed by silent reading, the fundamental factors—speed, comprehension, organization, and retention,—must be emphasized daily.
6. Teachers have failed to get the greatest results from their teaching of reading because their energy has been dissipated by the inclusion of oral English, dramatization, literature, and other subjects under the heading reading. They have failed to recognize the two distinct fields of reading, oral and silent. They have assumed that training pupils to read orally is equivalent

to training them to read silently, although in many respects the two methods of instruction and the respective aims are distinctly opposed to each other.

7. Silent reading is not a new subject to be added to the curriculum, rather a means of teaching a method of study.
8. Silent reading should receive at least as much emphasis as oral reading.

SUGGESTED READINGS

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Pintner, Rudolf and Gilliland, A. R. "Oral and silent reading." *Journal of Educational Psychology,* Vol. 7, (April) 1915.

CHAPTER II

SPEED IN READING

The importance of speed. Training for speed in reading is directly related to teaching pupils how to study effectively. The ability to read an assignment rapidly, and at the same time get the main points, is an essential factor in developing the habit of economical study.

The slow reader, in school and out, is handicapped. Courses of study are continually being made richer and broader; this demands more reading and greater discrimination. In life outside of school the demands made on the average person as a citizen and social being are increasing each year. In fact, success and happiness in life may depend largely upon the kind and scope of one's reading.

Inability of pupils to read rapidly. Students in normal schools and colleges are also working under a handicap because the length of the assignments is increasing, although little is done to increase their rate of reading. The authors vividly recall an experience which illustrates this variation in reading rates. The students in three elementary psychology classes in a certain normal school felt that an assign-

ment of from thirty to thirty-five pages was far too long. These mature men and women, former teachers, who were spending an average of three hours on each assignment, brought the matter to our notice in a friendly way. We thought it best to inquire into their habits of study. Since the three classes were in a study auditorium for the first two hours each morning, the instructor and three or four assistants undertook to measure the approximate reading rates of the students in an unobtrusive manner. The investigators found that although a few students read at the rate of a page per minute, some spent as much as eight and three-fourths minutes on each page, and the majority of the class read at the rate of a page every four and one-fourth minutes. The reading rate of these adults was twelve to fourteen pages an hour, although it should have been at least forty pages an hour, considering the simplicity of the subject-matter.

The discouraging feature of the outcome of this investigation was that even when those students did try to increase their rate of reading, they succeeded in doing so materially only when they were timing themselves. As soon as they failed to observe the time element of the experiment they relapsed into their usual rate, to which they had been accustomed since childhood.

Wide variation in reading rates. The wide variation in the reading rates of pupils makes the task

of increasing speed a very complex problem. Any teacher in any grade who will ask her pupils to read a given selection for a period of even three to five minutes can obtain sufficient data to demonstrate the wide variation in their reading rates. She will find that when measured for speed alone, pupils tend to fall into three groups, the noticeably slow readers, the medium-rate readers, and the very rapid readers. The following figures, which designate the number of words read per minute by a group of sixth-grade pupils, strikingly illustrate the sort of condition that one generally finds when making such an investigation: 374, 374, 362, 238, 197, 188, 181, 174, 170, 152, 145, 125, 121, 113, 98.

In many cases this variation in reading rate accounts for the assignment being too easy for some, too difficult for others, but nearly right for one-third to one-half of the class. Drill exercises, instead of placing the pupils on a more nearly even footing by decreasing the amount of difference between the rates of various groups, tends to increase it. Suggestions for economically handling a class which contains these three types of readers may be found in Chapter XV.

Monroe's experiments. Monroe gives the following statement of his conclusions regarding the probability of increasing the rate of silent reading:

The average silent-reading rate of eighth-grade pupils is approximately 240 words per minute for continuous

material. Scientific investigation is revealing that this rate may be greatly increased by the application of appropriate methods. On the basis of data already secured, it is conservative to say that this rate could be increased 25 per cent. As a matter of fact, it is even conservative to say that it could be increased 50 per cent.

Silent reading is used as a tool in practically all subjects studied in the high school or in college. The pupil who is equipped to read at the rate of 300 words per minute has a decided advantage over the pupil who is equipped to read only 240 words per minute. It means that the pupil who reads more slowly either must spend more hours upon his work or do less work.

Of two pupils who spend an equal number of hours upon their work in high school, the one who reads at the rate of 300 words per minute will accomplish one-fourth more than the pupil who reads at the rate of 240 words per minute. This will mean that in the course of four years this pupil will do 25 per cent more work, which approximates the equivalent of an extra year of schooling.

The data which we have at hand not only show that the rate may be increased, but also that the degree of comprehension can be materially increased, perhaps to an equal extent. Therefore, not only may pupils be trained to read more rapidly, but at the same time they may be trained to read with increased understanding. Thus, the pupil who has been trained to read at the rate of 300 words per minute not only will gain an extra year's schooling during his high-school course, but if his training has been of the right sort, he will actually do a better quality of work.[1]

Danger in speed drills. One of the fundamental aims of silent reading is that of training each child

[1]Monroe, W. S. "Value of standardized silent-reading tests." *Journal of Educational Research,* Vol. 1, (February) 1920.

to attain his highest level of achievement in speed without lowering his rate of comprehension. Although rapid reading, even "skimming," is of great importance, yet one would hesitate to increase the speed of reading if training in thought-getting would be sacrificed in doing so. Many teachers have the idea that the one great value of silent reading is that it trains for speed.

The authors have visited several of the leading city school systems and noted the great effort that teachers are making to help pupils acquire speed in reading. Some of them conduct reading classes in which the only direction given to the children is, "Read this lesson through once as rapidly as possible." The teacher keeps a careful time check on each pupil. These time records are daily charted on the blackboard as an incentive to greater speed, not only for the individual but for the class as a whole.

Many teachers have a three to five-minute time limit in their speed drills. They then count the number of lines or words read. These results are then placed on the blackboard as a means of motivating pupils to increase their speed. There are many other devices used to secure speed in reading, but the two mentioned are typical of all.

The methods described are pernicious, as are all schemes that have as their sole objective an increase of speed in reading. These devices develop slovenly, careless readers. The inborn desire to outdo others

seizes the child, and since the teacher takes no account of what the pupil comprehends or the amount of content which he retains, the result is reckless "skimming," seeing words, and for many pupils, seeing only lines.

Value of effective speed drills. It is entirely possible, however, to train the pupils of every grade to a high degree of efficiency in speed, and at the same time to increase their ability to get the main points or thoughts in the lesson. The methods for securing speed discussed above were condemned because comprehension or thought-getting was entirely neglected. Had the teacher who used these devices for the purpose of training in getting speed also given the pupils a test to determine how well they had got the thought of the lesson, then carefully charted those results, the ideal and habit of reading for thought would have been equally developed.

Teachers who give daily drills for speed and comprehension find that many students tend to read at great speed but with little comprehension. A corrective device for this evil consists in determining each pupil's class standing by the sum of his ranks in both speed and comprehension. An example of the conditions which that plan often reveals is shown in the case of a boy who usually ranked first in speed in a class of twenty-four, but twenty-second in comprehension. This speedy but careless reader had a total score of twenty-three which ranked him much

lower than one of his classmates who was third in speed but first in thought-getting. It is an axiom that every speed drill in reading should be followed by a test of thought-getting. The results of Miss Green's experiment, presented in Chapter III, substantiate the claim that both speed and comprehension in silent reading may be greatly improved in a relatively short time.

Gilliland's experiment.[1] This investigation was an attempt to answer the questions: Can a reader speed up his reading rate without lowering his capacity to reproduce what he has read? What is the effect of different speeds of silent reading upon ability to recall what has been read?

Two sets of six paragraphs each were chosen for the experiment. One set was for use with high-school and college students, the other for use with pupils of the fourth and seventh grades. The paragraphs in a set were relatively equal in difficulty but differed widely in content. Each paragraph included ten distinct ideas and contained fifty words. A paragraph chosen from each of the two sets is given below. Each paragraph was printed on a separate card.

> The Amazon is the longest river in the world. It drains most of the northern half of South America. Its mouth is along the equator. The rubber tree grows in this valley and the few

[1]Gilliland, A. R. "The effect of rate of silent reading on ability to recall." *Journal of Educational Psychology,* Vol. 11, (November) 1920.

people that live there spend most of their time making gum.

(*Selected from the material for grade pupils.*)

In person, William of Orange was above middle height. His eyes and complexion were brown. His head was small, portraying the alertness of a soldier. He was more than anything else religious. He went through life bearing the people's sorrows upon his shoulders with a smiling face.

(*Selected from the material for high-school and college students.*)

Each subject read at three different rates of speed, his normal rate, his maximum speed as controlled by the knowledge that he would be called upon to reproduce what he had read, and a rate of about half normal speed. As a rule this last speed was actually not nearly so slow as the subject was directed to read, but it was definitely slower than his normal rate.

TABLE I

COMPREHENSION SCORES

	FOURTH-GRADE PUPILS	SEVENTH-GRADE PUPILS	HIGH-SCHOOL STUDENTS	COLLEGE STUDENTS
Slow	8.3	11.1	10.5	10.6
Normal	8.25	10.3	8.56	10.7
Fast	9.57	11.04	8.54	9.75

The above table indicates that fourth-grade pupils scored 8.3 ideas on the two paragraphs when read-

ing slowly, 8.25 ideas when reading at normal rate, and 9.57 ideas when reading rapidly. Thus it is evident that changing the rate of reading did not materially affect the comprehension. The table is to be interpreted in the same manner for the other groups.

Generally the readers seemed to get about the same number of ideas whether they read rapidly, slowly, or at the normal rate. If there was an advantage, it seemed to be in favor of rapid reading for the children and slow reading for the older students.

When we consider the time required to read the paragraphs, in relation to the amount of material gained from the reading, we see the great advantage of rapid reading as compared with slow or normal reading. There were 20 per cent fewer ideas gained per second in slow reading than in reading at the normal rate, and 26 per cent more ideas gained per second in rapid reading than in reading at the normal rate. This superiority of rapid reading is shown by each of the four groups of subjects tested.

TABLE II

IDEAS GAINED PER SECOND

	FOURTH-GRADE PUPILS	SEVENTH-GRADE PUPILS	HIGH-SCHOOL STUDENTS	COLLEGE STUDENTS
Slow	.134	.234	.195	.242
Normal	.183	.266	.251	.416
Fast	.256	.293	.329	.566

The figures given in Table II clearly set forth the value of rapid reading. For instance, .134 ideas were gained per second when these fourth-grade pupils read slowly, and .256 ideas, nearly twice as many, were gained when the pupils read rapidly. Since the pupils obtained practically the same number of ideas from each of the two paragraphs (as shown by Table I), whether they read at a slow, normal, or fast rate, the advantage and importance of reading these paragraphs rapidly (or in almost half the time required when the pupils read slowly) is significant. For example, fourth-grade pupils when reading slowly required 61.6 seconds to read the two paragraphs; they scored only 8.3 ideas. Dividing the comprehension score by the time gives .134 ideas per second. Pupils of this same grade, when requested to read rapidly, used only 37 seconds in reading the two paragraphs; they then obtained 9.57 ideas. Using the method of computation suggested above gives .256 ideas per second. It is of course understood that pupils should not be urged to read so speedily that they exceed the rate at which one may expect them to comprehend the material read.

While there are unquestionably speed limits beyond which we should not go, there seems little doubt that almost any one can materially increase his reading rate without perceptibly reducing the percentage of ideas which he can reproduce. If this is true, the

teacher of reading who insists upon accurate, rapid, silent reading would be able to reduce not only the time required by pupils for preparing their lessons, but also greatly increase their efficiency in life, which is a matter of still greater importance.

Physiological factors affecting speed. Perhaps no other institution has done as much research in an attempt to determine the physiological factors affecting reading as has the University of Chicago. By

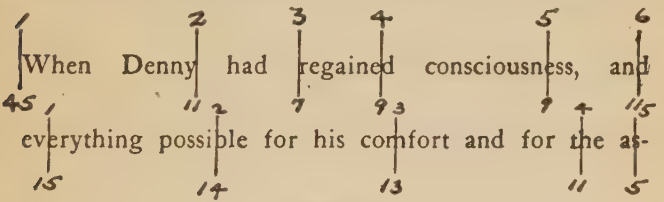

FIGURE 1[1]

means of very delicate and extensive laboratory equipment and a group of trained experimenters it has been possible to gather many scientific data on the eye-movements of children and adults of various mental capacities when using different types of reading material.

By means of photographic registrations Dearborn found that movements of the eye when reading are interrupted by distinct pauses or fixations. The six pauses in the first line and the five in the second line of Figure 1 were made by an adult when reading.

[1]After Charles H. Judd's *Reading: Its Nature and Development* (p. 18). *Supplementary Educational Monograph*, Vol. 2, No. 4, (July) 1918. University of Chicago Press, Chicago.

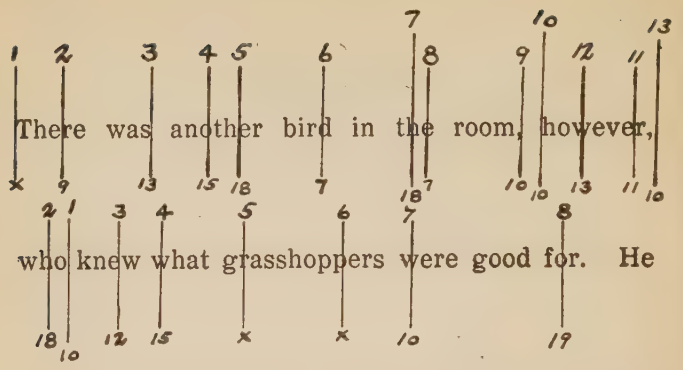

Fig. 2. Silent reading by a poor reader in the fifth grade. X indicates that it was impossible to determine with precision the length of the pause.

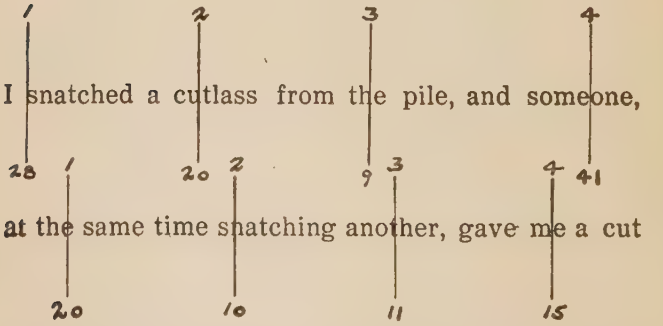

Fig. 3. Silent reading by a rapid reader in the seventh grade. Each vertical line indicates one pause. The top number indicates the number of the pause, the bottom number its duration in fiftieths of a second.

After Samuel Chester Parker's figure in the *Elementary School Journal, December,* 1921.

The number of pauses per line varies with different readers as shown by Figures 2 and 3 on page 38.

From a physiological point of view, the main characteristics of slow reading are, many pauses or fixation-points, a considerable duration of time at each point, and a number of regressive movements or backward sweeps.

As one should expect, the characteristics of rapid reading are, fewer pauses, a very short time duration at each pause, and a decrease in the number of regressive movements.

Dearborn's conclusions. After much experimenting, Dearborn declares that each person has formed "motor habits" in reading which are evidenced by a rhythmical series of the same number of pauses per line, and by a uniform time distribution at each fixation-point. He also declares that the amount read in a sweep is seldom equal to the extent of the field of perception. In other words, at one "eyeful" pupils do not take in all the syllables and words that they are really able to see. Hence, speed in reading can be materially increased by enlarging the perception-span. Exercises in which phrase cards are flashed are an effective means of lengthening the child's perception-unit.

From such data any wide-awake teacher of reading may properly deduce the following conclusions: All methods or devices should tax the eye-span to the limit; that is, each child should be trained to see

as many words as possible at each of his pauses or fixation-points. All methods or devices used in the grades should aim to reduce the frequency of pauses or fixations. Since most of the reading time per line is consumed at the fixation-points, the teacher should use only those devices which lessen the time spent at each pause. Since one's rate of reading becomes a fixed motor habit, as difficult to change as is any other habit, great stress should be laid throughout the grades on forming motor habits of speed, accuracy, and stability because it is likely that by the time the pupils reach the seventh grade it will be difficult to change their motor habits in reading.

The old A B C method, our present overemphasis of word and phonic methods, and the undue emphasis placed on oral reading in the lower grades, are some of the outstanding causes of the present slow rate of reading. The evil effects of these methods are fully treated in later chapters. The particular methods and devices one should use to insure the functioning of the above principles are fully discussed and demonstrated by sample lessons for each grade in Part II. Any method which does not to a marked degree tax the child's ability in speed and comprehension should be discarded.

Hygienic factors affecting speed. The print of the page is of great importance because the length of line affects the motor habits, and because the length of line and size of type may produce eyestrain and

fatigue. Experiments have proven that the lines in our textbooks are usually too long. Dearborn favors a line about one-third longer than that usually used in a newspaper. That length enables the reader to get concurrent impressions from the lines immediately above and below the one being read, with which they are often closely related in thought. Long lines of reading matter distract because the concurrent impressions received from the lines immediately above and below the one being read are unrelated to the object of immediate attention. When the lines are too long, they give no opportunity for a wide span of attention; the peripheral perceptions from the ends of a line are too different and confused to aid the reader in inferring the general nature of the line's content.

Since the number of pauses per line and the time spent at each pause affect the speed of reading, short lines make it possible for the reader to gather a general notion of the thought in the whole line at the initial fixation. This in turn makes the following pauses in the line few in number, and the duration of each pause much less. In short, we guess much in our reading, or read "out of the tail of the eye," so to speak. It is well to remark that reading familiar subject-matter helps pupils to establish wider perception-units.

Size of type is often regarded as an important factor affecting the speed of reading. Judd states,

however, that there is only a slight change in the number of words recognized at each fixation when the size of the type is doubled. When the size is reduced by half, the character of the eye-movements undergoes only a slight change.

The effect of irregular indentation or of breaks in a line, such as often occur around illustrations, is detrimental to speed when reading and often causes early fatigue. The occasional change of muscular motor adjustment and angular displacement slows up the rate of reading by causing longer pauses at fixations and by causing many cases of refixation, that is, coming back over the word. This muscular readjustment soon causes fatigue which may result in serious eyestrain, if reading is long continued. For that reason those primers with the open-page appearance, large type, good spacing, and words grouped in natural phrases are to be highly recommended, because such an arrangement of material promotes word grouping.

Other factors affecting speed. The psychological and environmental factors that affect speed and comprehension properly belong to the next chapter. The child's rate of reading depends largely on his ability quickly to comprehend new situations, and this in turn may be influenced by the range of his experiences. Quick word recognition depends upon the physiological and mechanical factors discussed, and upon the psychological as well.

SUMMARY

1. Silent reading is a means of training pupils in effective methods of study; hence, the silent-reading period should be used to develop that skill.
2. Speed in reading is one of the requisites which an economical method of study demands.
3. Experiments indicate that pupils and adults are far below their possible achievements in rate of reading, and that the speed and comprehension abilities of pupils may be increased at the same time.
4. Physiological factors, viz., eye-span and duration at the fixation-points, are important factors that must be seriously considered and taken into account in all methods of teaching reading.
5. Mechanical factors, viz., length of line and size of type, help to determine the rate of speed and fatigue.
6. Teachers should discard all methods of teaching silent reading which do not encourage a pupil to read as rapidly as possible without detriment to thought-getting.

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CHAPTER III

DEVELOPING THE ABILITY TO COMPREHEND

The importance of comprehension. On the preceding pages we have repeatedly emphasized the fact that the silent-reading period should nearly all be devoted to teaching pupils right methods of study. The good student is one who rapidly reads his lesson through once, and at the same time is able to comprehend the content of what he reads. Developing skill in thought-getting, as well as training in increasing speed, is absolutely essential in teaching pupils how to study.

Training in quick apprehension and in comprehension is the important task, because it is the basis of the pupil's possible progress in all subjects. Failure to solve arithmetic problems is often due to inability accurately to read the conditions set forth. Whether the subject-matter is geography, history, grammar, or hygiene, the pupil's success depends largely upon his ability to get the meaning from the printed page. This ability is almost entirely a product of training; the logical and ideal time to give specific drill in developing it is during the silent-reading period.

Comprehension neglected. Training children to

comprehend has been and is now the most neglected factor in teaching reading. Horace Mann, in his *Second Annual Report* as the Secretary of the Massachusetts Board of Education, in 1838 wrote as follows:

I have devoted especial pains to learn, with some degree of numerical accuracy, how far the reading in our schools is an exercise of the mind in thinking and feeling, and how far it is a barren action of the organs of speech upon the atmosphere. My information is derived, principally, from the written statements of the school committees of the respective towns — gentlemen who are certainly exempt from all temptation to disparage the schools they superintend. The result is, that more than eleven-twelfths of all the children in reading classes, in our schools, do not understand the meaning of the words they read; that they do not master the sense of the reading lessons, and that the ideas and feelings intended by the author to be conveyed to, and excited in, the reader's mind, still rest in the author's intention, never having yet reached the place of their destination. And by this it is not meant that the scholars do not obtain such a full comprehension of the reading lessons in its various relations and bearings, as a scientific or erudite reader would do, but that they do not acquire a reasonable and practicable understanding of them. It would hardly seem that the combined efforts of all persons engaged could have accomplished more in defeating the true objects of reading.

We have made great progress in teaching reading, especially in the primary grades, since the time of Horace Mann, but we have scarcely begun to do the work right. Thousands of teachers continue the traditional method of hearing the children read

throughout the whole recitation period. They ask very few, if any, questions about the content. Most of the questions pertain to enunciation, inflection, and the omission, insertion, or mispronunciation of words. The pupils sit listlessly in their seats, waiting only for their turn to drawl through, or possibly to declaim, a paragraph or two. The idea of testing the pupil's comprehension of what he reads and his ability to retain the main points of each paragraph seems foreign to teachers of reading in many schools.

A typical lesson. The following is part of the stenographic report of a sixth-grade reading lesson observed in a city school. The report records verbatim every question asked and every suggestion that resembled a question, except in two instances when a few pupils talked among themselves so inaudibly that one could not hear distinctly. The title of the lesson was "Henry Hudson."

TEACHER: Open your books to the lesson. What is the title of the lesson? Who was Henry Hudson?

Then followed a dispute as to whether Hudson was an Englishman or a Dutchman.

TEACHER: Let us proceed with our reading now. Had you read this lesson carefully you would have known Hudson was no Dutchman. Metha, you may begin.

The pupil read the first paragraph. While she was reading, eleven of the twenty-three pupils were looking about the room apparently wool gathering.

The name of this bold sailor will be learned by every boy or girl who studies geography. Most of us know of the beautiful Hudson River, the finest stream of water in the great Empire State, New York. A noted strait and bay are named also for this hardy captain of the sea.

TEACHER: Did any of you see any mistakes?

PUPIL: Please, teacher, she did not say "geography" right.

TEACHER: How should it be pronounced? (The pupil then articulated the word.) Any other suggestions?

PUPIL: She didn't stop or even raise her voice between "Empire State" and "New York."

TEACHER: That's right. Remember, children, these commas and periods mean something. Next, Sarah, you read.

The pupil read the second paragraph very well. One boy was quietly sharpening his pencil, two others were whispering, another was whirling his knife, and a girl was adjusting a ribbon.

Hudson was English born and English bred. He sailed on the great Atlantic Ocean first in an English ship, to find a passage to far-away China. He sailed to the northwest in the hope that he would find a way open to the Pacific across the North Pole, or not far below it. The brave captain saw mountains of ice, and he went nearer the North Pole than any one had ever done before, but he could not find the passage he was looking for.

TEACHER: Any corrections?

PUPIL: No, but which way and about how far is China from here?

The teacher gave a fair answer. Two pupils then asked questions relative to the meaning of "English

bred'' and ''ice mountains,'' which seemed to be answered by two others near the questioner.

TEACHER: Robert we'll have you read. Maybe you will forget playing with your knife awhile.

The pupil read very plainly and rather flippantly, much to the disgust of some and to the joy of others in the class.

> The Dutch people in Holland heard of Hudson's voyage, and a company of merchants of that country hired Captain Hudson to see if he could find a passage from Amsterdam in a vessel called the Half Moon. He sailed and sailed, a long distance, until at last the sailors became so tired of seeing nothing but fog and ice, that they refused to go any farther.

TEACHER: What corrections have you to make?

ROBERT: (Ignoring her question.) I'd like to know why they tried to get through the northeast and northwest. Why didn't they go around South America?

TEACHER: That is not my question. Pupils, have you any suggestions about Robert's reading?

PUPIL: He read so fast, and didn't stop at periods, and put in words.

TEACHER: Anything else?

ANOTHER PUPIL: Yes, he left out ''so'' and ''that.''

TEACHER: You are right. Now Catherine, you may read the next two paragraphs. Robert, you please see if there is any difference between your reading and Catherine's.

The pupil read with ease and good expression.

> Then he turned his ship toward the coast of North America. He did this because his friend, Captain John Smith, had sent him a letter, with a map, which made him think that such a passage might be found. Hudson reached Chesapeake Bay, but the weather was so stormy

that he did not think it safe to enter it. He sailed, instead, northward along the coast.

In September, 1609, he came to a beautiful bay formed by the spreading out of a noble river. At that point the stream is more than a mile in width, and he called it the "Great River." Not far from its mouth, and on the eastern side, is a long narrow island. The Indians called it "Manhattan Island." Hudson soon noticed that the Great River had hardly any current, and that the tide from the ocean moved with great force into the river. This made him think it was a salt river. Perhaps he had at last found the passage he was seeking, the passage from the Atlantic to the Pacific.

TEACHER: Wouldn't you call that good reading? Have you any questions?

PUPIL: What is meant by a "tide"?

TEACHER: It is the rise and fall of water every now and then.

PUPIL: I don't see how it could go up a river.

TEACHER: We will take that up in our geography lesson some day. Benjamin, you may read.

The pupil read fairly well. Not more than five of the twenty-three pupils paid attention to the one reading or to their books.

Hudson was greatly pleased with all he saw, and he said, "This is as beautiful a land as one can tread upon." He soon began to sail up the stream, wondering what he should see, and whether he should find the Pacific Ocean. First he passed the Palisades, a great natural wall of rock, from four to six hundred feet high. This extends for nearly twenty miles along the western shore of the river. Then, higher up, where the stream breaks through great forest-covered hills, he came to a place which we call the Highlands.

TEACHER: Was that all right?

PUPIL: Too slow. Do you suppose the Indians built the Palisades?

TEACHER: Why, no; they were always there.

PUPIL: Is a "natural wall" a stone wall?

As the teacher seemed not to appreciate the pupil's difficulty, she shook her head and smiled.

Failure to utilize the pupil's interests. It has not seemed worth while to report the remainder of the lesson, because the teacher asked the same type of questions at the close of every paragraph. We may remark, however, that this teacher heard almost the whole lesson without asking a question that would test the pupil's comprehension, arouse his interest, or stimulate his appreciation. She missed an opportunity to increase the children's geographical and historical knowledge of the Hudson River, Hudson Bay, England, Holland, China, the Atlantic Ocean, Chesapeake Bay, the Highlands, and Amsterdam. It is evident that the terms "English bred," "natural wall," "mountains of ice," "tide," and "salt water" were not understood. But the teacher's greatest error was in ignoring the boy's question as to why Hudson was trying for a northwest passage to Asia. Had this question been thoroughly discussed and answered by the pupils, they would have comprehended, as never before, the lack of geographical knowledge during the seventeenth century, and certainly they could have been led to a keen appreciation of the progress made in that field of knowledge since then. Besides, the answer to that question would

have made clear the motive force that drove Hudson on and on, even to his tragic death. The teacher overlooked all such possibilities; she emphasized neither speed nor comprehension in reading. The tragedy of the whole situation is that such teaching is today not the exception but the rule in many of the best school systems. What may it be, then, in many of the villages and rural districts?

The teacher's problem. The preceding report is indicative of what happens daily during the reading period in many of our schools. Time so spent is worse than wasted, for the pupils are not only failing to learn anything of value, but they are forming habits of slothful, careless thinking which will accompany them through life. Teachers who accept such lessons fail to use an opportunity to stimulate and train the minds of pupils; they fail to see the problem of how best to train pupils to the highest possible level of achievement in getting the substance of an article at a single rapid reading. To do that should be the aim of every teacher during the silent-reading period. If teachers are to realize that aim they must create a desire in the pupil for rapid and thoughtful reading, and use only those methods and devices which will tend to make speedy and purposeful reading a habit.

In conjunction with creating wholesome reading attitudes and habits in the child, methods and devices must be used to increase his vocabulary, stimulate his interests, and widen his experience so that he will

be able to apprehend new situations more accurately. Methods of developing skill in thought-getting are discussed in Chapter IV, and many sample lessons demonstrating how this may be secured economically appear in Part II. In every lesson the child should be given a thorough test as a means of discovering his difficulties and noting his progress.

Yoakam's experiment.[1] Professor Gerald A. Yoakam recently demonstrated by experiment that comprehension or thought-getting is badly neglected in some schools. His problem was the determination of the value of a single reading.

Yoakam used six selections: "The Admiralty Islanders," "Tuberculosis," "Medieval Castles," "Peanuts," "Chasing a Rainbow," and "The Government of Switzerland," which included examples of narration, description, and exposition. He decided that this wide range of subject-matter used with a large number of cases would insure a reasonably accurate measure of the value of a single reading and also indicate the type of material that pupils most readily comprehend. The experiment was conducted in the sixth, seventh, and eighth grades; the results represent the scores made by more than 500 pupils. An initial test was given in order to determine how much the pupils already knew about the subject-matter, so that the value of a single

[1]Yoakam, Gerald A. "The effect of a single reading." (An excerpt from an unpublished doctor's dissertation offered to the State University of Iowa in 1920.) *Twentieth Yearbook of the National Society for the Study of Education: Part II.* Public School Publishing Company, Bloomington, Illinois, 1921.

reading might be isolated. The pupils were asked to read the article through once, and were then subjected to a thorough written test.

The results of a single reading of "The Admiralty Islanders" by pupils in each of the grades is given here in terms of the average scores of each grade.

GRADE	VIII	VII	VI	V	IV
	20.9%	19%	16.6%	14.6%	7.5%

The results obtained when the pupils read the other five articles once and were immediately given a written test are further evidence of their inability to grasp the main points of a lesson at a single reading. The following figures are the average scores made by pupils of the sixth-grade class after reading the articles indicated. The results were obtained by subtracting the score made on the initial test from that made on the immediate-recall test. It may be observed that the average score made by pupils who read the simplest narrative material, "Chasing a Rainbow," was only one-third of the possible score.

ARTICLE	AVERAGE SCORE
Tuberculosis	16.8%
Medieval Castles	21.1%
Peanuts	25.6%
Government of Switzerland	23.9%
Chasing a Rainbow	33.2%

Germane's experiments.[1] Additional data which corroborate the trustworthiness of Yoakam's findings

[1]Germane, Edith G. "Relationship between speed and comprehension in silent reading." (An unpublished master's dissertation offered to the State University of Iowa in 1920.)

are contained in a study by Edith G. Germane, in which she determined the value of a single reading, plus what the pupils might have already known about the subject. She conducted her experiment in the sixth, seventh, and eighth grades of two schools in a representative Iowa city. The 286 pupils who took part in the study were asked to read carefully a nine-page article on "Peanuts." After a single reading they were given a test on the material read. The results of this experiment are summarized below.

TABLE III
(Possible score 58 points.)

Grade	VI	VII	VIII
Range	0–30	3–38	6–38
Average in points	11.2	15.4	19.8
Average in per cent	18.3	26.5	34.1

The table shows that the number of correct answers made by the pupils in the sixth grade ranged from 0 to 30. Some pupils were unable to answer a single question at the end of a single reading; the highest score was 30 points out of a possible 58. The average score of the pupils in this grade was 11.2 points or 18.3 per cent of the possible score. A careful analysis of these data shows that there are wide individual differences among pupils of the sixth, seventh, and eighth grades and that the result of a single reading by those pupils is on an average comparatively low.

Germane's study shows a higher score of percentage value for the pupils who read the article through once

than does Yoakam's study. It must be borne in mind, however, that these percentages include not only the gain made by a single reading, but they also represent the value of a single reading plus whatever knowledge of the subject the pupil may have had before reading. Both studies show conclusively that when one considers the present reading ability of children, it is apparent that a single reading does not by any means furnish sufficient preparation for a lesson. Nevertheless, the ideal for which we should strive is to have pupils show a relatively high degree of ability to comprehend and retain what they read, even after a single reading. We believe that ideal can be attained by systematic training in methods of study.

Some teachers may say that the use of a single reading to measure children's ability to comprehend is unfair and impractical. They maintain that if the pupils had been given an opportunity to read the lesson at least three times, the scores would have shown that they have much thought-getting ability. That contention is refuted by data obtained in an experiment performed by the authors. It consisted of three tests given 450 pupils. The tests were based on the articles "Immigration," "Peanuts," and "Tuberculosis." In each experiment the pupils were asked to read one of the articles through as many times as possible in a thirty-minute period. They were informed that at the conclusion of the period they would be given a thorough written test on the article read. The

findings indicated below have been accepted as trustworthy.

TABLE IV

RESULTS BASED ON READING THE ARTICLE "PEANUTS"
(Possible score 58 points.)

GRADE	AVERAGE READINGS	AVERAGE SCORE IN POINTS	AVERAGE SCORE IN PER CENT
VI	3	18	31%
VII	4	20	34%
VIII	4	26	45%

RESULTS BASED ON READING THE ARTICLE "IMMIGRATION"
(Possible score 65 points.)

GRADE	AVERAGE READINGS	AVERAGE SCORE IN POINTS	AVERAGE SCORE IN PER CENT
VI	2	14	21%
VII	3	17	26%
VIII	3	25	38%

The low scores reported are conclusive proof that pupils have little ability to comprehend. Some people maintain that a single reading of an assignment is not sufficient preparation. The fact that sixth-grade pupils answered only 25.6 per cent of the questions after reading the article "Peanuts" once confirms such a contention. But does frequent re-reading materially increase the number of thought units which a pupil is likely to gain? The data given above indicate a negative answer. For example, sixth-grade pupils who read the lesson an average of three times answered only 31 per cent of the questions, although pupils of another sixth grade who were of the same educational status, as determined by tests, answered 25.6 per cent of the questions after only a single reading.

Although these comparisons are crude, they suggest that it is not the number of readings which insures comprehension and retention, but rather the ability of pupils to concentrate and understand. The inability of pupils to understand the questions asked is shown by their ludicrous answers, some of which we have reproduced in following paragraphs. Since good reading is measured largely by the number of thought units or ideas which one is able to comprehend in a given time, instead of by the number of lines read, the problem of the teacher is to develop skill in thought-getting. Exercises in oral and silent reading should meet this important need. In fact, the teacher should emphasize comprehension during both the study hour and the recitation period.

A comparison of these scores with those made by pupils of like grades in another city school system who read the article only once, shows that the results that accrue from a re-reading are not commensurate with the extra expenditure of time. The results obtained by testing those who read the article on "Tuberculosis" were correspondingly low. Thus there is evidence to show that the average pupil does not read efficiently, or, in other words, that he does not know how to study.

In order to acquaint the reader with the kind of questions used in the experiment just described, and to show what kind of answers some pupils gave to those questions, we give the following excerpts from

the material used. It should be borne in mind that the answer to each question was to be found in the assignment, and that usually an entire paragraph was devoted to it.

QUESTIONS BASED ON THE ARTICLE "PEANUTS"

1. How long are peanut vines left on the ground before stacking?
   Correct answer: 3 or 4 hours.
   Among the answers given by 6.4 per cent of the pupils were the following: 3 or 4 feet; 18 inches; 2 feet; 3 or 4 weeks.
2. When should peanuts be planted?
   Correct answer: In the spring, a trifle later than beans and corn.
   Among the answers given by 5.1 per cent of the pupils were the following: In the fall; before the late frosts; in July.
3. What should be the distance between the rows?
   Correct answer: 36 inches.
   Among the answers given by 6.2 per cent of the pupils were the following: 36 feet; 6 inches; 18 inches.
4. What effect does the peanut have on the soil?
   Correct answer: It restores nitrogen.
   Among the answers given by 9.3 per cent of the pupils were the following: Hard on the soil; takes nitrogen out of the soil; runs down the soil.
5. What soil is best suited to raising peanuts?
   Correct answer: A sandy loam, light in color.
   Among the answers given by 8.1 per cent of the pupils were the following: Clay; clay-loam,

black mulch; good soil; brownish clay; Iowa soil.

QUESTIONS BASED ON THE ARTICLE "IMMIGRATION"

1. Name five nationalities that came from northern Europe by thousands immediately after the Civil War and made use of the Homestead Act.

   Correct answer: Norwegians, Danes, Swedes, Germans, and Irish.

   Among the answers given by 7.7 per cent of the pupils were the following: Italians, Serbians, Chinese, Japanese, Hungarians, and Turks.

2. To which of these nationalities does the author give special praise?

   Correct answer: To the Scandinavians, because they became thrifty farmers and built churches and schools.

   The following answers were given by 11.3 per cent of the pupils: To the Jews, because they are good cloth makers; to the Turks, because they peddled stuff cheaply; to the Hungarians and Serbians, because they worked on railroads; to the Irish, because they engaged in politics; to the Chinese, because they cheapened laundry; to the Italians, because they have fruit stores.

QUESTIONS BASED ON THE ARTICLE "TUBERCULOSIS"

1. What effect has a healthy body on the growth of the tuberculosis germ?

   Correct answer: Because of the resistance which it offers, it is an unfavorable place for their development.

   The following answers were given by 13.3 per cent

of the pupils: Rich food for the germ; body is good food when healthy.

2. What is the effect of sunlight on the tubercle bacillus?

Correct answer: Kills the germ.

The following answers were given by 10.6 per cent of the pupils: Makes them grow; a fine thing for germs; all germs need heat and sunlight; causes them to multiply rapidly.

The above answers would serve for amusement did they not indicate the reading comprehension ability of a large number of pupils. If the data in this chapter do not convince one that school children have little ability to comprehend what they read, one should make an assignment of factual reading material, then subject the pupils to a reasonable test. The results may surprise both teacher and pupils. No one factor in reading so handicaps a pupil in life as his inability to comprehend what he reads.

Comprehension may be improved. The responsibility for promoting improvement in the ability to comprehend rests almost entirely with the teacher, since efficiency in speed and comprehension is largely the result of training. Miss Mabel Green, third-grade teacher in the experimental school of the State University of Iowa, conducted an experiment[1] in one of her classes which shows that teachers can increase the pupils' ability to read rapidly and to comprehend.

[1]Green, Mabel. "The effect of specific drill exercises in silent reading." (An unpublished study prepared at the State University of Iowa in 1918.)

At the beginning of the month the teacher gave the pupils a story to read. From that she determined their reading rate; she measured their comprehension ability by means of a written test. During the rest of the month the teacher daily gave special drill exercises emphasizing speed and comprehension, and used modern devices and lessons to keep the pupils working at their highest level of achievement. At the end of the month she again tested the pupils for speed and comprehension.

The result of a month's specialized drill was indeed encouraging. At the beginning of the month the average rate of reading was 180 words per minute. On the second test, at the end of the month, the rate was 240 words per minute, an average gain of 33 per cent. The gain in comprehension was even more striking. At the beginning of the month the average score was 18, at the end 29, a gain of 61 per cent.

The most astonishing fact which the experiment revealed is that the gain in comprehension was much greater than the gain in speed. In fact, it was almost twice as great. One should expect a gain in both, but to have so great an increase in comprehension is certainly encouraging to teachers. However, it is not to be assumed that such progress can be made monthly in this grade or any other. Miss Green is a teacher of rare ability who worked under ideal conditions.

Stone and Colvin's experiment.[1] This investigation

[1]Stone, C. W., and Colvin, Carl. "How to study as a source of motive in educational psychology." *Journal of Educational Psychology*, Vol. 11, (September) 1920.

showed that when one employs a correct method and uses the factor of interest, speed and comprehension in silent reading may be greatly increased in a relatively short time. The study extended over a period of eighteen weeks and was made on forty-five subjects, undergraduate students of educational psychology in the University of Illinois. The motive and chief topic of interest in the course was the subject "How to Study." Having been asked to list the factors which they thought most affect the efficiency of study, the students unanimously agreed that increasing the ability to read silently affords most help in improving study habits. Two plans were used to obtain the desired help: (1) Controlled practice, i. e., reading for a specific purpose when under time pressure, (2) a study of the psychology of the silent-reading process. The chief topics of study were:

Reading as a tool of study.
The relation of rate to comprehension.
The importance of adequate motivation.
The relation of reading to language instinct.
The element of habit in reading.
The perception of meaning.
Eye-movements.
The effect of articulation.
The neurone-synapse-bond hypothesis.
The work curve.

The controlled practice consisted of reading (1) works on educational psychology for thirty fifty-minute periods, (2) such material as usually appears on the

first page of "The Outlook" for an additional five periods. About twenty units of the time used for reading works on educational psychology were spent on comparatively easy books such as Kirkpatrick's *Individuals in the Making,* Strayer and Norsworthy's *How to Study,* and Seashore's *Psychology in Daily Life.* The remaining ten units of practice in reading educational psychology were spent on Thorndike's *Briefer Course in Psychology.*

Results of the experiment. As measured by a test on the reading of educational psychology, the members of the class increased their capabilities by more than one-half. As measured by Monroe's *Standardized Silent-reading Test with Stone's Extensions,* the average score in rate of reading after practice and study was 74 per cent greater than the score made before. The score in comprehension after practice and study was 84 per cent greater than that made before. These students gained almost three times as much in rate of speed, and fully three and one-half times as much in rate of comprehension, as those members of a check class who did not receive the special practice and training in silent reading. At the conclusion of the experiment, the average student who did the practice and study had 180 per cent of the rate ability of a group of 405 students who did not receive the special training.

Some students made gains of more than 190 per cent in comprehension and 160 per cent in speed.

Contrary to the usual experience, the students with the lowest initial scores made the greatest gains, a phenomenon that the authors are unable to account for.

The reports of students who took part in this experiment show that some benefited from one feature of it, others benefited from other features. This was to be expected because of the different features included in the experiment. The adage, "Nothing succeeds like success," found a counterpart in the new one, "Nothing aids reading like reading." One factor responsible for the successful outcome of the undertaking was the requirement that each student read a certain piece of material for a definite length of time. Under the stimulus of this exercise the students did more reading in educational psychology than they ordinarily would have done. That helped to increase reading ability. Following a definite program and exerting an effort to concentrate while reading seemed to be the causes chiefly responsible for the increased rate of speed and the increasd ability to comprehend what was read.

The experiment in the high school. A similar exercise conducted with a class of high-school boys seems to prove the same fact. Apparently unable to concentrate, the boys were reading their lessons several times in an effort to master the content, but nevertheless they continued unable to get satisfactory results. After a few weeks of directed practice these

high-school students were able to get the thought from the text in much less time than formerly, and their rate of speed also increased noticeably. The students themselves, at first believing that the slower readers got more from the text than did the faster ones, changed their opinions at the conclusion of the experiment.

SUMMARY

1. It is of the utmost importance to train pupils to read purposefully and with a high degree of comprehension.
2. Developing the ability to get thought, and skill in doing so, have been neglected. This is shown by Horace Mann's *Report* as well as by scientific data.
3. Some of the present methods of teaching reading are responsible for the inability of pupils to comprehend, since many reading periods are devoted only to hearing pupils read without any attempt to test comprehension.
4. The teachers' problem is twofold: The development of an attitude or desire for purposeful, thoughtful reading. The discovery of methods and devices that will most efficiently develop the ability to comprehend.
5. The value of a single reading as an aid to comprehension and memory is low. On one occasion even the reading of the assignment three times did not yield results commensurate with the time and effort spent.
6. The ridiculous answers given by many pupils clearly demonstrate their low comprehension power.
7. Rate of reading and the ability to comprehend can be greatly increased in a short time.
8. The chief function of silent reading is to teach pupils how to study effectively.

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CHAPTER IV

DEVELOPING THE ABILITY TO ORGANIZE

The importance of organization. It has been pointed out in the preceding chapters that the silent-reading period should be used to develop speed and thought-getting, if pupils are to learn how to study effectively. The superior student is one who has acquired a third important skill, namely, the ability quickly and effectively to organize the subject-matter read. The term organization, as here used, includes making outlines and summaries and having pupils prepare lists of questions which they consider leading ones.

The importance of developing the ability of pupils to organize can scarcely be overemphasized. McMurry's *How to Study* devotes forty-nine pages to the discussion of organization. Psychologists have done much valuable research in the field of the higher mental processes. The results of their investigations include the establishment of many basic principles in the science and art of organization.

The psychological point of view. From a psychological point of view, training in the organization of subject-matter is urged because it requires the pupil to analyze, select, and synthesize. It requires much

concentration, judgment, evaluation, and association and is considered one good test of general intelligence. Organization is a great aid to memory or retention. To the degree that a lesson or discussion is well organized, to that degree each minor point is seen in its proper relation to the major idea, and each major thought in its relation to the whole. The love of rhythm is said to be instinctive, and for that reason applied psychology urges the organization of a lecture or lesson in the most logical manner so that the preferred paths may function.

The sociological point of view. Nor is the ability to organize of secondary importance when considered from the sociological point of view. How many men and women are failing in their several vocations every day, not so much because of some defect in personality, but because organization is sadly lacking in every proposition which they set forth? The fundamental principle in public speaking is organization. Because organization is of great consequence in life, both in and out of school, one feels justified in testing pupils to see how much organizing ability they have, and how that ability may be developed.

Present lack of ability to organize. The inability of many grade pupils to organize the main points of a lesson under headings and subheadings is very noticeable in many schools. Teachers do not seem to realize that training pupils and developing in them an appreciation of the worth of organization is one effective

method of building up good study habits. Too often pupils are not made to feel that they are expected to organize, weigh, and discriminate in their reading. The usual assignment, "Take the next four pages of the chapter," does not even suggest the possibility that many of the statements may be of minor importance and a few of major importance. Making a problem assignment stimulates the child to see for himself what sentences in the lesson are most worth while.

Some teachers make a specific assignment of three or four questions. These questions act as guides to the pupil's reading; they form the topics for discussion in the next recitation period. Pupils thus learn to discriminate between points having little or much bearing on the question before them. After a few weeks of such training, summaries can be made at the close of a recitation period. The teacher and pupils together sum up the main points in the lesson that were brought out or that should be discussed. Having one section of a class prepare the questions for another section to evaluate is an effective device. Organization can best be taught in connection with some class problem or project in which each pupil gathers a definite amount of data and sifts much reading material for points bearing specifically on his phase of the problem.

Although this chapter makes the point that the ability to discriminate and to organize the material read is of prime importance, we have reserved the discussion of teaching lesson organization until later.

Often, neither assignment nor recitation period is utilized to help the pupil acquire this important skill.

Germane's experiment.[1] Data obtained by means of two quite elaborate experiments seem to prove conclusively that grade pupils deplorably lack the ability to organize what they read. One of these was conducted in grades five to nine, inclusive, of the elementary and junior-high schools of the State University of Iowa, with this problem in mind: What is the value of making a summary-outline of an article as compared with the results to be obtained by re-reading the article. The pupils in the grades mentioned were divided into two groups on the basis of their intelligence quotients. Each section was given a nine-page article on hygiene to study for thirty minutes. One section was asked to read the article through once, then to make a summary-outline of the main points. The pupils were allowed to refer to the article as often as necessary when making their outlines. The other section was asked to re-read the article as many times as possible during the thirty-minute period. At the conclusion of the period both sections were given the same quiz for fifteen minutes.

Because this experiment was conducted in only one school and with only one kind of subject-matter, too much emphasis should not be placed on the results. It is interesting to note that the group which re-read

[1]Germane, Charles E. "The value of summarizing as a method of study." (An unpublished doctor's dissertation offered to the State University of Iowa in 1920.)

the article showed a superiority of from 4.4 per cent to 20.4 per cent over the other pupils. Papers of the pupils who wrote summary-outlines revealed a failure to discriminate between points of major and minor importance, and a waste of time in writing verbose statements where a word or phrase would have sufficed.

Another experiment in which practically the same method was used gave similar results. During this experiment 784 pupils were tested on three types of material. The data obtained by this experiment also indicate that making written summary-outlines as a preparation for the lesson is not an economical method of study for pupils who have not been trained in organization. However, as shown by reliable data reported elsewhere in this chapter, organization can be taught even to fourth-grade pupils; when that is done summarizing becomes a valuable aid to study after the child acquires the method.

Finch's experiment.[1] This was conducted in a junior high school in Rochester, New York. It originated in an attempt to aid the pupils in making "the most effective use of the time for study provided by the longer periods and the lengthened school day." Four tests were given, each based on a regular textbook, thus providing for future tests of similar character by means of which the progress of each pupil may be traced. The reasons for giving these tests to pupils entering the junior high school were (*a*) to make them

[1]Finch, Charles E. "Junior high-school study tests." *School Review,* Vol. 28, (March) 1920.

aware of certain things that they ought to know about studying, (*b*) to create a desire for instruction in the best way of studying, (*c*) to suggest to teachers the needs of the class and of individuals as a basis for possible and desirable kinds of instruction. Because only one of the four tests dealt specifically with the problem of organization, only that part of the experiment is reported here.

The fourth test was planned to bring out the following points: (*a*) Ability to select the important things told in a paragraph; (*b*) ability to write intelligent questions about a paragraph; (*c*) ability to collect the information suggested by a simple outline. In order to show the nature of the test and the method of using it, the following specimen is taken verbatim from the material used for the experiment.

Textbook used: Woodburn and Moran's *Introduction to American History.*

DIRECTIONS

I. Open your book and follow the directions given.

II. 1. State in your own words three important things told in the paragraph on the Phœnicians, found on page 11. *3 credits*

2. Write three questions that you would ask a pupil if you wanted to find out whether he knew the important facts in the first paragraph on the Egyptians, on page 4. *3 credits*

3. On pages 8 and 9 find the information called for in the following outline, and state it in your own words:

Chaldeans

a)	Location of their country	*1 credit*
b)	Occupations of the people	*1 credit*
c)	The ruler and his gardens	*1 credit*
d)	Some things the Chaldeans did	*1 credit*

The following summary gives an idea of how the ability to follow these simple directions for organizing varied among seventh-grade pupils. It is evident that the pupils were lacking in the ability to discriminate between points of major and minor importance, and to make a summary-outline of them. Eight classes which included 256 pupils took part in the experiment. The average score of lowest achievement for any one class was 20 per cent. The average score of highest achievement for any one class was 80 per cent. The average score made by the eight classes was 60 per cent. Following an examination of the papers and a study of the results obtained, the experimenter reached the following conclusions: Pupils must be convinced that getting the author's meaning from a printed page is quite different from repeating expressions found there. They must be taught to eliminate material of minor importance from their consideration, and to give important matter proper attention. The ability to formulate intelligent questions is an indication that the student has some knowledge of the related and essential facts in the material under consideration. Making a simple outline after having discovered the essential facts is a great help in memorizing desirable

information. Much valuable time can be saved if pupils have an adequate knowledge of how to use textbooks. Real progress is the result of wisely directed individual effort. Pupils must be convinced that it pays to give careful attention to all directions given by the teacher. Teachers should help pupils realize that studying effectively is quite different from studying anxiously. It is easy to think through a lesson if a carefully prepared outline is followed. Making satisfactory notes helps to summarize, to select essential material, and to gain the ability to reproduce it.

After the results of the tests had been carefully studied by the teachers, they suggested the following remedial measures which have proved effective in raising the efficiency of the study habits of these pupils: (1) Pupils' questions should be discussed by the class and those of minor importance rejected. (2) Drill should be given in the use of chapter, section, and paragraph headings. (3) Frequent use should be made of co-operative outlines to enable pupils to summarize their thoughts and select important facts. (4) Pupils should be given definite references to paragraphs and sections that they are asked to read, and they should be asked to list the important facts that furnished the desired information. (5) Much more attention should be given to determining whether or not pupils understand adult expressions used in textbooks. (6) Pupils should be required to prove their statements by reference to the textbook. This helps secure accuracy of

statement, and forces children to acknowledge their mistakes when made. (7) Practice should be given in using the textbook to find definite information suggested by a carefully prepared outline.

One teacher indicates that the tests helped her to remember that the assignment should serve to state the requirements of the new lesson, and to suggest the best ways of studying it. They also help her to keep in mind points that ought to be emphasized in silent study, to modify the content of lesson plans, to supervise silent study more successfully because of having more clearly in mind some of the things that ought to be observed while a class is studying, and to analyze the oral responses of the pupils more effectively because they seem to reflect study habits.

College students cannot organize their lessons. A cursory examination of high-school and college students' notebooks reveals the lack of ability to organize a lesson to an extent commensurate with one's expectations.

The authors have conducted classes in education and psychology in which they required many individual reports. Each student was told that he should summarize his assignment under two or three leading headings. Often, however, much to the disappointment of all, the student used most of the next recitation period to give a long report, in which he emphasized a dozen or more main points, as he thought. Such experiences are not uncommon, even in the best

colleges. The most encouraging feature of the whole matter is that the power to organize can be taught; it is largely a product of training. It is surprising what large dividends will accrue from spending a few minutes daily for a few weeks helping pupils to organize their lessons. Many teachers who have gone into schools of good scholastic standards have felt that the emphasis on organization for the first three or four weeks was time well spent, because the pupils rapidly acquire the method, and the acquirement of the method helps to master the lesson.

Teaching how to organize. That organization can be taught quickly, and that such teaching will yield fruitful results, is shown by an experiment conducted in the elementary school of the State University of Iowa in which sixteen seventh and eighth-grade pupils participated. By means of three preliminary tests the sixteen pupils were divided into two groups nearly equal in ability to organize the reading lesson and to comprehend it. Three thirty-minute periods were used weekly for three weeks to teach one group organization and the method of summarizing. The other group did not receive such special training. At the end of that time three new assignments were used to test the pupils' ability to organize and comprehend. It was found that the pupils who had been drilled in organization not only made much neater and more condensed summaries, but also answered an average of 21.3 per cent more questions on the written tests. Organi-

zation is a third necessary skill, which, combined with speed and comprehension, aids in making the finished product in study.

Earhart's experiment.[1] The problem of this experiment was to find out if pupils in the fourth grade, i. e., in the fourth school year, can be trained to study a lesson independently. The class selected consisted of twenty pupils of average ability. Sixteen lessons were given, each lasting from twenty-five to thirty minutes. There was no separate period for the study of the lesson. The problem raised the following questions: Can pupils state aims for themselves in reading? Can they find the relatively important parts of the subject-matter read? Can they question the validity of statements and form independent judgments?

For three weeks previous to this experiment the class had been reading Lida B. McMurry's *Story of Ulysses.* The use of the text was continued during this experiment because it seemed suitable for the purpose in mind. The first lesson was based on the story of Ulysses and the Phæacians. After some preliminary conversation about the needs of Ulysses and the experiences he had previously had among strange peoples, the teacher stated the aim thus: "We shall find out in this book how the Phæacians treated Ulysses." The children read silently for a few minutes. They used a marked list of words in their books to determine the correct pronunciation of proper names.

[1]Earhart, Lida B. "An experiment in teaching children to study." *Education.* Vol. 30 (pp. 236-42). 1909-10.

Other proper names, and words which the pupils could not pronounce without assistance, were written on the blackboard and divided into syllables by the teacher.

The teacher then asked the children which part of the story they would tell first, if they were asked to relate it. Several pupils attempted to answer but could not do so satisfactorily. One child said, "Ulysses made a bed of leaves." Another suggested as the topic to be told first, "What Ulysses did in the Phæacian land."

In response to the teacher's query as to what should be told next, some pupils tried to tell the story instead of giving a topic. Finally, one child gave for the second point, "Ulysses awakes." The fourth topic suggested was, "What the king's daughter did for Ulysses."

The pupils then read the selection aloud. At intervals they were allowed to ask questions about the story. These are the questions asked: "Why did Nausicaa take her maids to wash clothes?" "Why did she not go alone?" "Why did the king's daughter go at all?" "Why did the maidens walk?" "There was no room for the maidens, but why did Nausicaa work and drive mules?"

The spontaneity of the responses to the questions in the first lesson indicated clearly that the pupils were intensely interested in the subject-matter, but were unable to organize the other parts of the lesson in sequence. It was evident that training in evaluating

and organizing were necessary. The following lessons emphasized this factor.

After the pupils had read the eight-page booklet, entitled *Penelope and Telemachus During Ulysses' Absence,* they were asked to name, in order, the things they would talk about if they were telling the story to some one at home. They gave the following outline very promptly:

The princes wish to marry Penelope.
Penelope deceives the princes.
Telemachus holds a council.
Telemachus goes to inquire about Ulysses.
Telemachus visits Nestor.
Telemachus visits Menelaus.
The suitors make ready to kill Telemachus.
Penelope hears of Telemachus' absence.

This exercise occurred toward the close of the series of lessons. Both the nature of the topics and the readiness with which they were given were evidence of the pupils' gain in ability to discover and express the important thoughts of the subject-matter. It will be recalled that when the first lesson was given, the teacher stated the aim for the class.

When the last booklet of the story was taken up there was time for but one lesson with the class, so the lesson had to be somewhat hurried. The pupils had already stated the questions to be answered, and these constituted the aims in reading this section. They were told to read the entire eight-page booklet

silently, then to make a list of important subjects in it, to write any questions which they wanted answered, and any words in place of which they would like to have other words used. These papers were written by the pupils with no help whatever, except in regard to spelling, the use of capital letters, and punctuation. The following exercise, given just as it was prepared, shows the progress made from the time the first lesson was taught:

Ulysses awakes.
Ulysses and the swineherd.
Ulysses meets Telemachus again.
Penelope and Telemachus.
Penelope and the beggar.
The nurse recognizes Ulysses.
Penelope gives a contest.
Ulysses tries the bow.
The death of the suitors.
Ulysses rules over Ithaca again.
Why did Ulysses go to the swineherd?
Why did Ulysses beg for his bread?
Why didn't Ulysses tell Penelope that he was her husband?
Why did Telemachus go to the house of Laertes?

This series of lessons showed plainly that pupils in the fourth grade are capable of finding problems for themselves, of organizing the lesson, of asking intelligent questions, of forming sensible hypotheses, of exercising judgment as to the statements made by the author, of mastering formal difficulties for themselves,

and of exercising initiative wisely and profitably. It showed, too, that when pupils work in such a way they work with zeal, and accomplish much more than when they spend time upon useless details and mechanical methods of working.

As to their using the factors of proper study habitually, the time was too short to permit one to reach final conclusions. To test the matter thoroughly, the class should be trained to study geography, history, and other textbook lessons in this way from day to day throughout a number of months. By so doing, systematic study of the different subjects would be introduced gradually, and the work in each class would be strengthened by what is done in the others.

Teaching pupils to organize. In the third and fourth grades, stories and short expositions may be used as drill in making outlines. Pupils in those grades enjoy being called upon to state the main points made by the teacher in her talk on some phase of nature study, hygiene, or home geography. In fact, class summaries made with the teacher's guidance are economical ways to clinch the main points made during recitation periods.

By the time the pupils are well advanced in the fifth and sixth grades they should show considerable skill in outlining and summarizing lessons in nearly all their studies. The authors have often promoted a keen interest in the organization of lessons by dividing the class into two sections and having one section pre-

pare a summary-outline for the other to criticize. Pupils at this age enjoy thinking of any lesson or lecture as having just one central idea, comparable to the hub of a wheel, and considering all the points grouped under this central idea as so many spokes in the wheel. This clever device has been used successfully in high-school classes, in which the teacher of English, history or science requested the students to state what they considered the hub and spokes of the assignment. A diagram on the blackboard lends interest to such a plan.

Having the pupils use the last five minutes of a recitation period to sum up the main points brought out in the recitation is another very valuable practice. Notes taken in this way for a few weeks, known as a class summary, greatly aid the majority of pupils. Calling for an oral summary of the previous day's assignment is another means of teaching organization and providing a comprehensive review for all.

The preparation of summaries. One of the fundamental aims of teachers in charge of seventh and eighth grades, and even of high-school classes, should be to train pupils in making outlines and in writing concise summaries of lessons and lectures. A knowledge of many facts without the ability to classify, organize, and use them makes such knowledge practically worthless. The school work of the pupils in the upper grades is so varied and so informational that no teacher should find it difficult to formulate a method

for teaching organization and summarizing, or to create a favorable attitude toward such work among her pupils. Some of the devices described in Chapter XIV for use with pupils in the fifth and sixth grades may be used very successfully in the higher grades.

Another very interesting method is to take a part of each class period for finding what may be called the "signpost paragraph," that is, the paragraph which states the problem or trend of discussion which the author has in mind. Pupils soon learn how to find the signpost or key to the lesson. The next point of interest is to discover a way to determine most quickly the author's conclusions and his answers to the problem discussed. Students will soon learn that reading the first sentence or two of a paragraph, possibly also the last one, is sufficient. It is not within the province of this chapter to elaborate on methods of teaching organization, since that will be done by presenting specimen lessons in Part II. The aim here is only to point out the possibility of teaching organization.

SUMMARY

1. The importance of organization and summarizing, the third essential factor in teaching silent reading, has not received sufficient consideration by teachers.
2. This valuable skill is lacking among college students and grade pupils.
3. The results of the experiments show that the preparation of a lesson by means of a summary-outline is not economical unless the pupil has been trained to organize.

4. Several devices useful for teaching pupils to organize lesson material have been suggested. The authors have found those very useful in actual trial.
5. The results of a study made on sixteen pupils in the experimental school of the State University of Iowa and of studies made by Earhart and by Finch suggest that one can effectively teach pupils to organize their lessons.

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CHAPTER V

RETENTION

The importance of retention. The value of speed, comprehension, and organization as fundamental factors of a method of study has been treated in the three previous chapters. There is still another factor, namely, retention, which is of equal importance. In fact, it is the ability to retain and recall the main points of the material read which makes the acquisition and application of knowledge possible. Time and effort spent in developing skill in rapid reading and in organization are wasted unless the essential ideas are retained.

Experimental studies in retention. Ebbinghaus has done much experimenting to determine the ability to retain nonsense syllables, and his rate of forgetting for this type of material has been many times verified. He found that when a series of those syllables, such as "taz," "nmt," and others were learned to the threshold of immediate recall, 50 per cent were forgotten within twenty-four hours, 66⅔ per cent within eight days, and 80 per cent within one month. But the application of this law to logical, factual material is unscientific, because nonsense material does not

lend itself readily to the laws of interest and association.

Peterson's experiment.[1] This attempt to determine the effect of attitude on immediate and delayed recall is significant in any discussion of retention. In brief, the problem was, "What difference will it make in later reproduction whether a person knows or does not know, while reading a list of words, that he will be asked to reproduce the words."

Peterson's method of conducting this experiment was in the main as follows: The students in his psychology class were asked to copy twenty words as he read them. No other directions were given. After a few minutes those students were asked to copy another list of twenty words, equally as difficult as the previous list. This time the class was informed that each would be ranked according to the number of words he was able to recall.

The result of the experiment showed that in the second case the students recalled an average of 50 per cent more words than in the first. Peterson attributes this gain to the "mental set" of his students who knew they would be called upon to remember as many words as possible.

Ebert and Meumann also found that the attitude of the learner, his "will to learn," exercises an important influence over his whole memory result.

[1]Peterson, Joseph. "The effect of attitude on immediate and delayed reproduction: A class experiment." *Journal of Educational Psychology,* Vol. 7, (October) 1916.

These studies reveal one outstanding pedagogical principle which every teacher should apply: The pupil reads most effectively when he realizes that he is expected to recall the main points of the material read. This necessitates testing on the assignments by means of either short, brisk, oral reviews or written quizzes. If the subject-matter read is of sufficient importance to be studied, the recall of its fundamental facts should be assured.

Yoakam's experiment. Probably the most elaborate recent experiment that can be cited in this discussion of retention is Yoakam's study, "The Effect of a Single Reading."[1] Yoakam has attempted to determine scientifically the relative values of certain factors of study on recall or memory. This experiment was conducted in grades four to eight inclusive, and represents the results of more than 500 cases.

Reading tests were used to classify the pupils of each grade into groups of equal comprehension ability in silent reading. One group read the assignment through once rapidly, but very carefully, and then was immediately subjected to a test on the content. The other group read the same article through once, rapidly and very carefully, but no test was given until twenty days later, when this group took the test that had been taken by the other section. Neither

[1]Yoakam, Gerald A. "The effect of a single reading." (An excerpt from an unpublished doctor's dissertation offered to the State University of Iowa in 1920.) *Twentieth Yearbook of the National Society for the Study of Education: Part II.* Public School Publishing Company, Bloomington, Illinois. 1921.

group knew that a test would be given. The scores made by these two groups ought to be an approximate measure, at least, of the value of a single reading on an immediate recall, and on a recall delayed twenty days.

Immediate recall. The amount the several grades were able to recall immediately, after the single reading of an article entitled "The Admiralty Islanders," is as follows:

Grade	VIII	VII	VI	V	IV
	20.9%	19%	16.6%	14.6%	7.5%

If these figures are to be accepted at their face value, then at least two conclusions may be drawn: (1) A single reading is not sufficient preparation for a lesson. (2) Pupils lack the ability to recall any considerable portion of the material read. It is the opinion of the authors, however, that a single reading would suffice if pupils were trained in methods and devices which insure retention.

Delayed recall. One should keep in mind that the other group of pupils also read the article "The Admiralty Islanders" through once, but that the children were not tested until twenty days later. It was thought that this procedure would give an approximate measure of the amount of an assignment that pupils usually remember when it has been read once, and on which no oral or written test has been given. The following is a summary of the scores made by pupils of the five grades after a lapse of twenty days:

Grade	VIII	VII	VI	V	IV
	1.3%	0.7%	2.7%	3.8%	5.1%

Just why the pupils of the fourth, fifth, and sixth grades were able to recall more than those of the seventh and eighth grades is a matter of conjecture. It has been suggested that the material had a compelling interest for pupils of the lower grades which it did not have for those of the seventh and eighth grades.

One thing, at least, is certain: The ability of the pupils in these grades to recall and to remember any considerable portion of the material read is deplorably small. This inability to study a lesson with an attitude and method that insures remembering the main points may account to some extent for the poor showing made by pupils on almost any unexpected quiz or test to which they are subjected. Since it is possible to develop skill in retention, teachers are urged to emphasize this fourth factor not only in the silent-reading periods, but in all classroom work.

Testing before reading. Professor Yoakam also attempted to determine the effect on immediate recall if pupils are tested on a lesson before they read it. In this same experiment a third group of children was given a written quiz on the lesson before reading it. Then the assignment was read through once carefully, and again they were subjected to the same questions. The scores made by this group on the second test were much higher than the scores made by the other

two groups of pupils who had read the same article and taken the same test. Hence, one is justified in believing that some important factor operated to cause the difference. Yoakam's conclusion is that the pupils of the third group, who took the test before reading, were motivated in their reading; that is, they read purposefully and with the idea of finding the answers to the questions submitted to them in the initial test. That such an inference is entirely justifiable is apparent when we observe that the grades in this group excelled each of the grades in the other two groups by the following scores:

Grade	VIII	VII	VI	V	IV
	14.6%	13.6%	9.5%	5.8%	4.7%

The above scores represent the amounts by which the pupils in the third group excelled the pupils in the other two groups when all were asked to take a test after a single reading. For example, the eighth-grade pupils in the third group were tested before reading the article and also immediately afterwards. After subtracting whatever knowledge they showed on the first test, it was found that the third group excelled by 14.6 per cent. This difference in the amount recalled was probably due to the fact that the third group concentrated on the questions missed in the first test. The following outstanding suggestions derived from Yoakam's experiment may be applied to school-room procedure with the best results. Teachers should make use of them.

1. Give pupils a test before they read the lesson. That makes them read purposefully and with concentration and discrimination.
2. An initial test tends to increase their retention, as shown by both Yoakam's and Peterson's experiment.
3. After pupils read the lesson over once carefully, give them the initial test a second time. Pupils can then see how much they gain from a single reading. This is pupil-motivation. They will be interested in seeing themselves grow from week to week. Many teachers who are now using the initial test as a means of stimulating purposeful reading believe it increases the amount recalled.

The combined effects of giving tests before reading and immediately after reading, and the value of a single reading upon the amount recalled in twenty days, were tentatively worked out by Professor Yoakam. His comments are:

The use of the above figures in this way is at the most rather speculative, but the general significance of the results was that the effect of a single reading as a means of insuring delayed recall of the type of material here represented, is apparently almost negligible. The motivations caused by the initial test and the effect of the repetition of the tests apparently far outweigh in importance the single brief contact with the material as a means of insuring retention of the ideas. Or, to put it more clearly, if the motivation caused by the testing and practice due to the repetition of the test had not taken place, the result of the single reading,

as shown by the scores of the third group, would probably have been very, very small.

We may draw four conclusions from Yoakam's study: (1) The amount of material retained after one reading without testing or motivation is almost nothing. (2) Submitting the test questions before reading motivates the reader by helping him focus his attention on the main points; it is also a powerful aid to permanent retention. (3) Giving a test immediately after reading the material is another equally potent factor in aiding retention. (4) Frequent tests are absolutely necessary if retention of even the most important facts of school work is to be secured. The small amount of material retained by pupils in the grades may thus be explained, if the figures and conclusions of Yoakam's study are accepted. In conclusion we may say that daily, weekly, and monthly testing on all assignments is the surest guarantee that a high degree of comprehension and retention will be secured.

Germane's experiment. Further to substantiate the data given in Yoakam's table, another experiment was conducted by four other teachers in another city school system. Four hundred pupils in the sixth, seventh, and eighth grades took part in this experiment. Two different types of reading material were used, a nine-page article on "Peanuts" and another on "Immigration." The pupils were asked to read each article through carefully as often as they could in thirty

minutes. They were then subjected to a fifteen-minute test on the material they had read. Fifty-eight days later a recall test, based on the set of questions used in the immediate-recall test, was given. A summary of the results is presented in the table below.

TEST BASED ON THE ARTICLE "PEANUTS"
(Possible score 58 points.)

GRADE	AVERAGE TIMES READ	IMMEDIATE RECALL	DELAYED RECALL AFTER 58 DAYS
VI	3	30.1%	9.8%
VII	3.5	34.6%	12.7%
VIII	4	45.1%	21.3%

The table is read thus: Pupils in the sixth grade read the article on "Peanuts" an average of three times, answered 30.1 per cent of the questions on immediate testing and 9.8 per cent of the questions fifty-eight days later.

TEST BASED ON THE ARTICLE "IMMIGRATION"
(Possible score 65 points.)

GRADE	AVERAGE TIMES READ	IMMEDIATE RECALL	DELAYED RECALL AFTER 58 DAYS
VI	3	18.5%	4.9%
VII	3.5	23.1%	7.8%
VIII	4	41.2%	16.7%

The table is read thus: Pupils in the fourth grade read the article on "Immigration" an average of three times, answered 18.5 per cent of the questions on immediate testing, and 4.9 per cent of the questions fifty-eight days later.

The reader's attention is called to the following

facts relative to the above study: (1) The two articles read were well adapted to the grades in which they were used. (2) The pupils read for thirty minutes with greater zest than they probably would have had under normal conditions, because they knew a test would be given. (3) The fifteen-minute written test was a severe one which held all to their tasks. Forty-five minutes was spent on each article. In view of these facts the scores show that the amount retained after a lapse of fifty-eight days varied from 4.9 per cent to 16.7 per cent of the total possible score.

Bird's experiment.[1] One hundred normal-school students in educational psychology were asked to read a chapter entitled "The Nervous System as the Organ of Behavior." Although the assignment contained many facts of psychology and physiology with which these students had little if any acquaintance, no explanation or directions were given concerning the material set for study. The students were told merely to study the assigned lesson in preparation for a written test.

The following semester the same lesson was assigned to another group of a hundred students having the same general ability and preparation. This time the assignment was preceded by careful explanations of all different parts of the chapter; the explanations were supplemented by demonstrations with the model

[1]Bird, Grace E. "An experiment in 'focalization.'" *School and Society*, Vol. 8, (November) 1918.

of a brain and a preserved human brain. The supervised study period of half an hour was designed to arouse interest in the topic. At the next recitation period the students were given a test similar to that previously used for the first group. It consisted of twenty questions each of which could be answered in a few words. The correctness of the answer depended on the student's knowledge of facts, rather than upon his ability to apply and use those facts. Two questions were: "The point of contact between neurones is called a ———." The name of neurones which convey stimulation to the muscles is ———."

It is scarcely necessary to remark that the general results of the second test were of a higher grade than those of the first one. The measured differences show that the half hour of preparation focalized and motivated the work to the extent of raising the average grade from 54.15 per cent to 74.1 per cent, and the median grade from 51.1 per cent to 73.95 per cent. The range of the extremes resulting from the unfocalized assignment was 5 to 90, of the other from 49 to 100. The absurdity of the assignment made to the first hundred students is obvious. Nevertheless, that type of assignment is still used in many classrooms.

The results of this experiment indicate the importance of a careful specific assignment as an aid to retention, the possibility of catching the attention and arousing genuine interest in a lesson by carefully ex-

plaining its difficult parts, the probability of increasing the achievements of the students in the quantity and quality of work accomplished, and the advantage of minimizing the initiation of incorrect habits and obviating the waste of unlearning them.

How to increase retention. The following methods and devices may be used to develop skill in immediate recall, as well as permanency of retention. (1) Let the pupils know that they are to be tested on the material read. Do not fail to test them. (2) Give a test over the assignment before reading. As has been shown, that greatly increases the amount immediately recalled and permanently retained. (3) Give a second test after the pupils have taken the preliminary test and read the lesson through once. That appeals to most pupils since it gives them an opportunity to see the gain made in a single reading. (4) Have short, brisk, daily reviews of the outstanding features of the previous day's discussion or lesson. (5) Provide weekly and monthly reviews of the work covered. (6) Have pupils prepare a list of questions, the answers to which cover the main points in the work of the week or the month. (7) Let the test consist chiefly of these questions. Have the papers graded in class by pupils and teacher, who are also to decide what constitutes a complete answer. (8) See that the papers are at once returned to the pupils, thus giving each a chance to review his own and to protest if he thinks it has been improperly valued.

Tests conducted according to the suggestions offered insure four reviews of the main points: (*a*) When the pupils prepare the test; (*b*) when they write it; (*c*) when each corrects another's paper; (*d*) when each looks over his own paper for possible errors in valuing. Outlining and summarizing also help one to retain. To remember well one must establish logical associations. Hence, organization of the main points in a lesson under the proper headings and subheadings is a powerful aid to logical association. Organization also appeals to one's innate love of rhythm. Thorndike urges the importance of interest, attention, and play as dynamic factors affecting ready recall. It is surely the common experience of every teacher that to the degree to which the pupils attend, are interested, and enjoy certain situations in their school work, to that degree do those situations remain fixed and tend to recur. It is a basic law of human psychology that one responds to situations of interest and pleasure more frequently than to their opposites. Thorndike's laws of readiness, exercise, and effect, together with the more specific laws of recency, frequency, intensity, and duration, should be understood and the principles applied, if permanency of recall is to function. The importance of focalizing the pupil's attention upon the main points in the next assignment should not be overlooked. That practice is of particular value in classes of immature pupils who cannot readily distinguish among major and minor topics.

SUMMARY

1. Retention is an important factor of effective study.
2. Experiments have proven the inability of the average pupil to recall immediately any considerable portion of what he reads.
3. Experiments show that of 450 pupils who read an article two or more times, not one could answer 50 per cent of the questions submitted immediately after the reading.
4. The amount which pupils are able to retain after intervals of twenty and fifty-eight days is almost negligible.
5. Teachers are urged to use methods and devices which help to insure retention.
6. The teacher of silent reading and of other subjects should make adequate provision for daily, weekly, and monthly reviews of the minimal essentials.

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CHAPTER VI

QUESTIONABLE METHODS OF TEACHING READING

A consideration of reading methods. The four preceding chapters were devoted to an intensive discussion of the larger problems of silent reading, viz., speed, comprehension, organization, and retention. In each chapter an attempt was made to set forth the importance of the problem under discussion, in its relation to teaching pupils how to study. The results of several investigations of methods of study reveal the deplorable status of reading common to our schools. In view of these facts, this chapter deals with two problems: (1) Some reading methods and their outstanding defects. (2) Some suggested remedies. Since the most effective time to discuss a remedy is in conjunction with the defect itself, these two themes will be treated throughout the chapter in conjunction with each other.

The A B C method. One of the most glaring defects in teaching reading is the use of the old A B C method still in vogue in many of the backward sections of our country. Human ingenuity could scarcely have devised a scheme more unnatural and bewildering to

the child. Reading is at best an artificial process which involves the use of symbols. The child comes to school thinking in terms of thought units; therefore, the psychological and natural approach is by means of the sentence method, or possibly through a modification of the word method.

The first five or six years of the child's life have been crowded full of experience of all kinds. Thousands of questions and the memory of thousands of experiences are in his mind waiting to be expressed. And yet, since the days of the Greeks, we have imposed upon the immature minds of children twenty-six letters usually presented in three forms. The confusion arising in the mind of an eighth-grade pupil if a complex formula in trigonometry were presented, could scarcely equal the mental disturbance caused children by beginning reading with the A B C method.

Defects of the A B C method. But aside from this evil, the most outstanding objection to the A B C method is that it retards the development of speed and comprehension in reading. The movements of the eye in reading a line are interrupted by a succession of distinct pauses or fixations. Speed in reading consists in forming motor habits with few pauses or fixation-points to the line, and with a minimum time at each fixation period.

Pupils whose first years in school are spent in fixing their attention daily upon a letter or syllable, form habits of narrow eye-span, that is, small perception-

units. It is believed by many that the concentration of attention in noting the peculiarities of certain letters, or the phonetic group to which syllables belong, forms a motor habit of taking in narrow perception-units and making fixations of long duration at each pause. In all probability the child never can become a fast reader because he has formed these motor habits.

The reading exercises of the primary grades should be such as to enlarge the pupil's perceptual span. Consequently, phrase-flashing exercises, which necessitate the pupil's recognizing a group of words in a very short time-exposure should be frequent in order to offset the danger of the pupil's seeing and reading only one word at a glance instead of taking in an "eyeful."

A photographic registration of all slow readers' eye-movements would probably show eight or nine fixations to the line, instead of only the necessary three or four, as well as many regressive movements or re-fixations. Moreover, the duration of attention at each fixation would be from one-half to three times as long as that of a rapid reader.

Increasing the comprehension of pupils is hindered by the use of the A B C method, because in comprehension the attention must be focused on the thought, not on the letter or sound. Slow readers do not develop a wide attention-span. Their peripheral impressions are so limited that no general impression of the line can come from a single fixation.

The phonetic method. The phonetic method is open

to the same criticism as the A B C method, although its evil effects may not be as bad. When reading is taught by this method, the attention of the pupil is focused not upon the thought or sentence unit, but upon the letters and syllables of a word. Hence, the pupil forms motor habits in reading which result in very short eye-span and fixations of long duration. The chief value of the phonetic method is that the pupil is no longer dependent on the teacher for learning new words. It should be used in the word-drill study period, never in the silent-reading period. All the special phonetic methods greatly overemphasize the value of that training, give it too large a place in the early work in reading, and pursue it long after its essential values have been obtained.

The word method. The word method, if abused, is also detrimental to speed and comprehension. In fact, many of the evils that are inherent in the A B C and the phonetic methods are present in the word method, although to a less degree.

Many teachers begin with the word method and never get away from it. They begin to teach reading from a chart on which a half dozen words appear. Then the pupils are asked to read short sentences, either individually or in concert, while the teacher slowly times or isolates each word with a pointer or ruler.

If the primer is used, each child is asked to read a line or so, and to point to each word. The highest

ambition of some teachers seems to be to have the pupil "keep his finger on the place," whether he is reading or following the reading of some one else. A none too gentle rap on a delinquent's finger tends to enforce the rule until he forms the habit of pointing to each word as it is read. Thus the child's attention is focused on words instead of phrases or whole sentences. While reading, pupils should not be allowed to point to single words. When the teacher points to work on the blackboard she should indicate phrases or sentences with a sweep of the pointer.

Criticisms of the word method. Is it any wonder that pupils taught by such methods form motor habits of narrow perception-units and exceedingly long time distribution at each pause? Roller charts are now to be had on which appear phrases and short sentences for beginners. These are flashed before the pupil one line at a time for one or more seconds. He thus forms a habit of seeing and comprehending a whole thought unit at one or two fixations. Some teachers make use of the blackboard, flash cards, and games for the first half year until habits conducive to speed and comprehension are formed. For example, the teacher writes the entire reading lesson on the blackboard before the recitation period. It is then covered. When the time comes to read, only one sentence is exposed at a time. The exposure is brief lest the pupils form slow motor habits of reading syllables and words instead of phrases and sentences at a glance.

Until recently educators have accepted the theory that the word-unit method is the natural and most economical way of teaching reading to beginners. They declared that because the child comes to school with a word vocabulary he consequently thinks in words, and they insisted that his field of perception is very limited. Regarding the latter claim, Dearborn states that the amount read per fixation is seldom equal to the field of perception. For digits or nonsense syllables the attention-span may be rather limited, because such material offers scant opportunity for the alws of association to function. However, when the letters form words, sixteen or twenty can be caught in one sweep, and in reading ordinary prose four to six words are often so included. Note the width of the perception-unit of a high-school student as reported by Schmidt in the following sentence:

The | stranger who w|ould form a co|rect opinion |
of the English charac|ter must not confi|ne
his observa|tions to the me|tropolis.

The vertical lines indicate the fixation-points, showing that the perception-unit may be wider than three or four letters, as many advocates of the word method would have us believe. If we accept the above statements of scientific investigators as being trustworthy,

it is evident that the word method does not tax the field of perception to the limit. This defect, together with the extended time distribution on each word, makes the method very questionable. Successful teachers of reading, who claim to use the word method, succeed with it because they use flash cards, blackboard work, and other devices in which phrases and short sentences really become the perception-units.

Oral reading. Overemphasis of oral reading was another factor which contributed to the deplorable status of reading set forth in the preceding chapters. The public has a right to ask its teachers, "Why should 90 per cent of the classroom reading be oral, if 99 per cent of the reading in adult life is silent? Why build up a set of motor habits in childhood that handicap one in adult life?"

Oral reading has been emphasized in the lower grades because it is said to be the most natural, being an expression of irrepressible, psychic tendencies. Those who advocate oral reading in those grades do so because certain psychological factors are involved. Unless one is of the extreme visual-image type, the problem of inner speech in reading is ever present. There is usually an inseparable association between a word and its sound so that when the visual image of a word is recognized the auditory image of the word arises. That results in the verbal-motor expression of the word. In reading, the auditory and motor centers are active; purely visual reading is not normal. Lip-

reading in children is a perfectly natural tendency, especially if their minds are of the motor or auditory type.

The fact that oral reading is natural to the child does not at all justify encouraging the practice. Many babies naturally want to suck their thumbs, but no mother is justified in encouraging that. The truth is that oral reading greatly hinders both speed and comprehension because it depends on the physiological mechanism of vocalization.

Dr. Schmidt's table[1] shows that the average number of pauses per line made by the forty-five subjects of his experiment when reading silently was 6.5, and the average number of pauses made when they read orally was 8.2. The average duration of pauses in silent reading was .3882 seconds; the average duration in oral reading was .3808. Oral reading required 28 per cent more pauses to the line, and 24 per cent more time at each pause, than did silent reading. This difference is explained by the fact that oral reading is controlled by speech units rather than divided into units of visual perception.

Method of training primary pupils. Since oral reading retards speed at least 25 per cent, according to Schmidt's data, and since it is almost impossible to modify those motor habits after they are formed, one is justified in making the greatest possible use of

[1]Schmidt, W. A. "An experimental study in the psychology of reading." *Supplementary Educational Monograph*. Vol. 1, No. 2, University of Chicago Press, Chicago, 1917. (Consult Tables VII and VIII, p. 43.)

silent reading even in the first grade. One experimenter has pointed out that if the training in oral reading were discontinued at a very early stage, and training in rapid silent reading stressed, the tendency toward inner speech might be greatly reduced and visualization cultivated.

The fact is that children do have the ability to take in all kinds of situations visually without speech accompaniment, and that it is unnecessary for them to articulate, even inaudibly, when they read symbols. This may be demonstrated in any primary-grade reading class by having the pupils do the thing the symbol suggests. For example, the teacher writes on the blackboard, "Who will bring me the bean bag?" "Let the boys play the girls today," etc. The responses to these written symbols are acted out by the children. The whole game is played, the score recorded, and the material put away by the children without a word being spoken by either teacher or pupils.

Judd reports[1] in one of his monographs that the tendency to inner speech which oral reading encourages may be almost overcome by great effort even in adult life. He cites the case of a man who was a lip-reader and also an excellent oral reader. His average rate of silent reading was very slow, only 2.3 words per second. Realizing his handicap, he practiced daily for four weeks on easy and familiar material. A conscious

[1]Judd, Charles H. "Reading: Its nature and development." *Supplementary Educational Monograph*. Vol. 2, No. 4, pp. 159, 160. University of Chicago Press, Chicago.

effort to suppress articulation, to increase eye-span, and to see phrases instead of words was a part of the daily exercise. His reward was an ability to read 4.7 words and in some cases 6.2 words per second. Further training has made him a rapid silent reader.

Lip-reading. We naturally ask, Why should we any longer stress oral reading and thus retard our speed and comprehension for life? It has been pointed out that lip-reading is natural, being evidence of inner speech. Many are of the opinion that it is encouraged by emphasizing oral reading in the early grades. Regardless of what may be the causes, the evils of lip-reading are so outstanding that some mention of them should be made at this time.

Quantz[1] found that among the subjects of his experiment the ten pronounced lip-readers were those who read 4.1 words per second. Ten who showed least movement of the lips read 5.6 words per second. In terms of percentage, the non-lipreaders read 36 per cent more rapidly than the lip-readers did. In percentage of thought reproduced, the lip-readers made a score of 14.9, the non-lipreaders 24.4. In quality, the lip-readers made a score of 48, the non-lipreaders, 73.3.

Germane's experiment. Further to substantiate the findings of Quantz, attention is called to a more recent study[2] of lip-reading made by Edith G. Germane. This

[1]Quantz, J. O. "Problems in the psychology of reading." *Psychological Review: Monograph Supplement*, Vol. 2, No. 1, (December) 1897.

[2]Germane, Edith G. "Relationship between speed and comprehension in silent reading." (An unpublished master's dissertation offered to the State University of Iowa in 1920.)

experiment was performed on 450 pupils of the sixth, seventh, and eighth grades. The articles used were those on "Peanuts" and on "Tuberculosis," already mentioned. The pupils were asked to read the article through once as they ordinarily do a story. The time was marked on the blackboard at five-second intervals; as soon as a pupil finished reading he looked up, then noted and recorded his time. Then he took up the list of questions and immediately answered as many as possible. While the pupils were reading, three teachers recorded the names of those who read with decided lip-movement. The rate of speed and the percentage of comprehension of both types of pupils were tabulated separately and compared. The lip-readers who read the article "Peanuts" were handicapped in both speed and comprehension. Sixth-grade lip-readers read an average of 161 words per minute. Pupils of that grade who were not lip-readers read an average of 169 words. In the comprehension test, the average score for lip-readers was nine points, eleven points for those who were not lip-readers. Seventh-grade lip-readers averaged only 156 words per minute and made a comprehension score of fifteen points. Those who were not lip-readers read 180 words per minute and made a comprehension score of fifteen points. Eighth-grade lip-readers read an average of 174 words per minute and made an average comprehension score of sixteen points. Members of that grade who were not lip-readers averaged reading 205 words per minute

and made an average comprehension score of eighteen points. The results obtained by having the pupils read the article "Tuberculosis" showed similar relationships. Pupils of the three grades who read that article were handicapped in both speed and comprehension.

The figures here presented probably do not adequately indicate the seriousness of the handicap. Let us look at them from another point of view. In the eighth grade the average rate for non-lipreaders who read the article "Peanuts" was 205 per minute, and for lip-readers it was 174 words per minute, an average difference of 31 words per minute or 1,860 words per hour. The pamphlet read had about 340 words to a page. Hence, the non-lipreaders in the eighth grade read an average of five pages more per hour than did the lip-readers. If the comprehension of the lip-readers had been superior, this handicap in rate would not be so serious, but as a matter of fact the non-lipreaders made an average score of eighteen points in comprehension as compared with the sixteen points made by the lip-readers. They excelled the lip-readers by practically 13 per cent.

Suggested treatment for lip-reading. The data presented in these two studies convince one of the evils inherent in lip-reading. It is difficult to suggest a remedy, especially for a child of pronounced motor type. It would seem advisable, however, to minimize oral reading and stress silent reading with pupils who have formed this habit. The tendency toward

motor response could be taken care of in primary grades by having the pupil do what the word, phrase, or sentence says. Many teachers get excellent results by drawing the attention of the pupils to adult lip-readers, pointing out how foolish it looks, and explaining just how it handicaps the reader. Then by some artificial means, such as an honor roll, the teacher encourages the pupils to inhibit this tendency. Placing the finger on the lips often aids in inhibiting lip-movement.

It seems that lip-reading may be partially checked by presenting all drill exercises very rapidly. For instance, in a phrase-flashing exercise, make the exposure of such a group of words as "under the table" so short that the pupils have not time to whisper it word by word. It is well to separate pupils into at least two groups (three is better) according to their rate of reading. Lip-readers should also receive special drill designed to break the habit. Much patience on the part of teacher and pupils is necessary if this habit is to be overcome. With training, the phrase rather than the word will eventually become the unit.

Need of speed and comprehension drills. Perhaps the greatest cause of poor reading is the teacher's failure to make provision for daily training in speed and comprehension. No pride in rapid and thoughtful reading is developed, and no provision is made in the daily schedule which insures practice in speed and

comprehension. We seem to be concerned with the child's getting knowledge rather than with developing his ability to acquire knowledge. Part II of this book will attempt to show how speed and comprehension drills may be made a part of the daily lesson.

Teaching pupils to organize. Emphasis should also be placed on organization. It is surprising how soon pupils can be taught to tell when a new paragraph begins and ends. Their oral and written outlines would often put much older pupils to shame.

Teaching pupils to retain. The value of daily reviews and drills, and of a schedule for general reviews, can not be overemphasized. The vital point is not how much a child learns, but the method he employs to learn.

Choice of subject-matter. If pupils are to become efficient readers, they must have access to an abundance of material. The contents of the readers most widely used are good. Story-books, too, are of value, but for purposes of training in getting and organizing information, the training must be applied in reading such subjects as history, geography, and science.

SUMMARY

1. The use of the old A B C method in teaching beginning reading does not facilitate the formation of good reading habits.
2. Overemphasis of the phonetic or word methods is unfavorable to the development of speed and comprehension.
3. About 90 per cent of the reading period has been de-

voted to oral reading; training in the best methods of silent reading has been neglected.

4. Experiments seem to prove that lip-reading is a handicap that affects both speed and comprehension.
5. Drill exercises that emphasize speed, comprehension, organization, and retention are necessary.
6. Various kinds of subject-matter should be used.
7. All defects should be met with proper remedial measures.

SUGGESTED READINGS

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CHAPTER VII

REMEDIAL WORK IN READING

The importance of remedial work. There are doubtless thousands of boys and girls who fail each year and are unable to continue with their classmates because of defects which can readily be remedied. For such children the results are discouragement, retardation, and elimination from school in far too many cases. The condition has occasioned much scientific research in remedial work in reading. Data gathered from these investigations suggest methods for diagnosing reading defects, and devices for remedying them.

Gray cites[1] a case that furnishes a good example of the value of diagnosis and remedial work. A boy slightly above the general intelligence of his age-group had been in school four years and was still unable to read. Careful investigation revealed that he had never formed the habit of moving his eyes regularly from left to right along a line. At times the first pause would be near the end of the line, at

[1]Gray, William S. "The value of informal tests of reading accomplishments." *Journal of Educational Research*, Vol. 1, (February) 1920.

other times near the middle of it. The pauses were irregular and followed no definite order.

In order to help this pupil the teacher prepared drill exercises consisting of typewritten words placed half an inch apart. She then required the boy to read a series of such words for five minutes each day in order to cultivate habits of regular eye-movement. It was soon possible to group words in thought units spaced one-half inch apart for his reading exercises. Following those exercises he read simple reading material. The ease and accuracy with which he soon became able to read indicated that one of the major difficulties which hindered the boy's reading had been discovered and corrected.

One of the outstanding weaknesses common to many methods of teaching reading is the use of the same drill or exercise for a whole class, in the hope that it will cure all reading ills. As a matter of fact, there may be as many reading difficulties as there are members of the class. For that reason teachers are urged to make diagnoses of the pupils' defects. When such remedial work is attempted, two difficult problems arise: What are the particular causes of the pupil's oral and silent-reading defects? What types of drill will most thoroughly and economically remedy the defects? This chapter and the following are devoted to a consideration of methods for use in discovering reading difficulties, and to suggestions for eliminating them.

Means and Methods of Diagnosing Reading Difficulties

Standardized tests. To discover and diagnose oral and silent-reading defects is the first task of the teacher who attempts to increase either the speed or comprehension of her pupils by scientific means. What are some of the means and methods that may be used to discover reading defects? Teachers in many schools are using standardized tests for this purpose. If the study habits of the pupils are carefully observed and noted while they are taking the tests, and if the test papers are carefully analyzed, the teacher can usually discover many reading defects.

Superintendent C. J. Anderson and Elda Merton[1] of the public schools of Stoughton, Wisconsin, used Gray's *Oral-reading Test* to determine the errors most commonly made by third-grade children in oral-reading classes. The classification of errors made and the percentage of each kind are shown by the following table.

Classification of errors made by third-grade pupils while reading Gray's *Oral-reading Test*

Kind of Error	Percentage
Repetition	15
Insertion (letter or word)	14
Omission (letter or word)	8
Substitution	24
Mispronunciation	3
Accent	4

[1]Anderson, C. J., and Merton, Elda. "Remedial work in reading: Parts I and II." *Elementary School Journal*, Vol. 20, (May, June) 1920.

Portion omitted	7
Portion inserted	10
Omission not changing meaning	4
Addition not changing meaning	2
Vowel sounds	2
Confusing letters not governed by rule	1
Wrong syllable	3
Repetition to correct an error	3
Not attempted	1

The typical errors made in silent reading were discovered by means of two silent-reading tests, Monroe's and Thorndike's. The percentages of errors of each kind are shown below.

Kind of Error	Frequency	Percentage
Meager meaning vocabulary	741	33
Inability to find the essential idea	423	19
Omission of part of idea due to short unit of visual recognition	306	14
Giving general thought instead of specific answer, or particular instances instead of general thought; i. e., inability to get definite information from material read	293	13
Inaccuracy due to carelessness or haste	90	4
Failure to differentiate between words somewhat similar in spelling	76	3
Failure to note carefully small words and key words	95	4
Substitution of pupil's own thought for that in paragraph	97	4
Inability to think logically in response to question	91	4

In addition to the errors listed above, the following were recorded by teachers who observed the

pupils' silent reading. (1) Reading word by word instead of by thought groups. (2) Vocalization and lip-movement. (3) Using the finger to follow the line. (4) Short span of attention which results in loss of place, and the omission and repetition of words. (5) Slow rate of silent reading. Although these five headings include the types of errors that most frequently occur, there is much overlapping in the classification. For example, a slow rate of reading may be caused by vocalization and lip-movement, by using the finger to follow the lines, or by a meager number of words understood.

Teacher-made tests. As shown by the results obtained from the experiment cited, standardized reading tests may be used to determine oral and silent-reading errors. But what is the teacher to do who is not familiar with administering standardized tests and interpreting the results obtained? What can she do to determine reading errors and defects when she has none of the standardized measurements available? A reasonable answer to the latter question is to suggest that each teacher make her own reading tests.

When measuring the rate and quality of oral reading by means of a teacher-made test, the following suggestions should be kept in mind: Select reading material adapted to the child's grade. The pupil's reader or any of his other textbooks may be used. Note the exact second at which he reads

the first word of the selection and mark the word.[1] When sixty seconds have elapsed, mark the word which he was reading when the minute was up. However, let him finish the paragraph. Count and record only the words read in one minute. The pupils themselves can often do this accurately. In order to test comprehension ask such questions about the selection as you usually ask. Chart both the speed and comprehension record and file for future use. Note and record such errors as repetitions, substitutions, etc. As these data give a basis for remedial work, it is well to have the pupil read two or three minutes in order to get a definite idea of his needs. Follow the same procedure with each member of the class. If comparisons are to be made between the achievements of the pupils on this first test and on other tests given two weeks or a month later, the same type of reading material should be used and conditions should be as nearly the same as possible when the second test is given.

Devising class standards. If the teacher desires to benefit by the wholesome influence that usually comes from standardization, she may do so by devising standards for the class from the pupils' own records. To do this, find the average rate of the three most rapid readers in a class of twelve pupils, and the average comprehension score of the three who rank

[1]Some teachers think they can get a more accurate measure of the pupil's actual reading rate if they allow him to read three or four lines before they begin to mark time.

highest in thought-getting. Let these two scores be the standards or goals. Generally speaking, the average score made by the best fourth of the class affords a good stimulus for study. If such a method of standardization is adopted throughout the grades, the pupils in the upper fourth, who are already up to or above the standard of their own grade, may take as their goal the standard set for the grade immediately above them. The practice of determining the standard for the class from the pupils' achievements often awakens a genuine interest in reading. The personal element involved often causes the teacher to raise the question, "How well should a pupil read in this grade?"

If the teacher uses the above method of standardizing instead of those standards based on scientific measurements, she should begin a study of the reading defects of the 75 per cent who are below the class standard. Of the fourteen typical errors in oral reading revealed by Gray's *Oral-reading Test,* substitutions, repetitions, and insertions occur most often. The teacher can discover any of these by having the pupils read three or four paragraphs which she selects. Much of this diagnostic work can be done in class. A certain study reports that the teacher did a large amount of remedial work in one grade, although she used little time other than the usual recitation period. This is an advisable plan to follow, especially when the teacher has many duties.

Planning remedial work. Some teachers do not plan their remedial work advantageously. Instead of working with one pupil at a time, while the other members of the class await their turns, the teacher should classify the pupils into several small groups on the basis of their reading defects, then unite similar groups for certain lessons. During such exercises good readers who need but little help should spend their time improving the quality of their silent reading. "A definite diagnosis of individual traits in reading should form the basis of grouping. Every trait which influences reading habits can in turn be influenced by definite training and special practice."[1]

Anderson and Merton's data record nine reading errors discovered when pupils were diagnosed by the two silent-reading tests. The teachers who gave the tests also noted five other reading defects. The last five were determined by carefully observing the pupils' study habits when they took the tests. Even had standardized tests of silent reading not been available, it would have been possible for any of those teachers to discover many of the fourteen errors by using silent-reading material which they selected, as was done when the oral-reading errors were found.

How to make silent-reading tests. If the teacher devises her own silent-reading tests, she should keep the following facts in mind. Select three or four

[1]Zirbes, Laura. "Diagnostic measurement as a basis for procedure." *Elementary School Journal*, Vol. 18, (March) 1918.

pages of reading material adapted to the grade. Use material found in the pupil's textbooks and supplementary readers. See that all pupils begin reading at the same time. Measure the rate of reading by calling time at the end of one or two minutes and having the pupils find the average number of words read per minute. The teacher can expedite this work by counting the words in each line and writing at the end of the line the total number of words on the page up to that point. When the pupil shows the teacher the last word he read, she adds the last preceding number indicating a total to the number of words read in the line with which the pupil finished, and thus instantly obtains the total number of words read. The teacher can measure the pupils' ability to comprehend and to retain by having them answer definite questions based on what they read. Factual and well-organized material lends itself readily to this treatment. The questions should be worded so as to demand much thinking and little writing. File or chart both speed and comprehension scores for future use. Observe the pupils' study habits while taking the test, and note carefully the kind of errors made. When subsequent tests are given for purposes of comparison, select material as nearly as possible like that first used.

The teacher can arouse much interest by letting each pupil compute his own reading rate and figure

his own comprehension score. The latter should be based on the number of correct answers. The records of each pupil may be placed on the blackboard or filed for future reference. The teacher can standardize these class scores by taking as a standard the record made by the upper fourth. As has been said, the teacher-made tests and class-made standards often excite greater interest than do standardized tests and their accompanying standards. The intrinsic value of informal tests as a means of diagnosis and standardization has been set forth by Gray,[1] Waldo,[2] and Smith.[3]

Reading scales and tests. The teacher should use scales to discover reading difficulties whenever conditions allow. These scales not only show with what speed and accuracy pupils should read, but they also furnish a chart of each child's weaknesses. For example when the *Picture Supplement Scales for Measuring Ability in Silent Reading*[4] was used, it was found that some pupils in the third grade read as many paragraphs and attempted as many answers as are expected of a child two or three grades more advanced. A careful check on the accuracy of the answers showed that often only a few were correct.

[1]Gray, W. S. "Value of informal tests of reading accomplishments." *Journal of Educational Research*, Vol. 1, (February) 1920.

[2]Waldo, Carl D. "Tests in reading in the Sycamore schools." *Elementary School Journal*, Vol. 15, (January) 1915.

[3]Smith, Bertha M. "Efficiency in assimilating reading." *School Review*, Vol. 25, (November) 1917.

[4]Burgess, May Ayres. *Picture Supplement Scales for Measuring Ability in Silent Reading.* Russell Sage Foundation, New York City, 1920.

Some pupils were found who read very slowly and attempted only a few answers, most of which were correct. Some were discovered who could read neither rapidly nor accurately.

In a recent article,[1] the author of the scale mentioned above outlines a method of classifying pupils

TABLE V[2]

GROUP ASSIGNMENTS FOR SILENT-READING DRILL, TURNER SCHOOL, GRADE III, FEBRUARY, 1921

	Attempts	Much Drill in Care				Some Drill in Care	No Drill in Care	
		6 or More Wrong	5 Wrong	4 Wrong	3 Wrong	·2 Wrong	1 Wrong	0 Wrong
No drill in speed	20							
	19							
	18							
	17							
	16							
	15			David				
	14							
	13		Theodore		Peter		John	
	12							
	11						Henry	
	10					Barbara		
	9				Marjory			
	8	Francis					Elizabeth, Charles	Janet, Tim
	7					Lucille		
Some speed drill	6					Fred		Helena
	5						Winthrop	Bancroft
Much drill in speed	4							
	3							
	2					Douglas, Ruth		
	1							
	0							

[1]Burgess, May Ayres. "Classroom grouping for silent-reading drill." *Elementary School Journal*, Vol. 22, (December) 1921.

[2]Taken from an article by May Ayres Burgess which appeared in the *Elementary School Journal*, December, 1921.

whose reading defects have been determined. Teacher and pupils thus have these difficulties to guide them in selecting the kind of drill needed. The table on the opposite page illustrates the method.

This table shows that one of the pupils — Theodore — is a very rapid reader but a rather careless one; he attempted thirteen paragraphs and had five wrong. Two pupils, Janet and Tim, read eight paragraphs and did each exercise correctly. Douglas and Ruth, who represent the third type of pupils, read only two paragraphs and failed to answer either question correctly.

If the results of teacher-made tests and the needs of pupils as revealed by them are charted on the blackboard or made available to teacher and pupils by means of a diagram like that in Table V, it will perhaps, tend to create a genuine interest in reading. Each child will then know what difficulty he has to overcome. Teachers are urged to use standardized scales and to supplement them with others which they make and standardize.

Pressey's experiment. Luella C. Pressey reports[1] a reading test which she devised for the second, third, and fourth grades. In general her test is based on the assumption that two factors — meager vocabulary and the persistence of oral-reading habits — affect the progress of reading in the early grades. One part

[1]Pressey, L. C. "A first report on two diagnostic tests in silent reading for grades ii to iv." *Elementary School Journal*, Vol. 21, (November) 1921.

of her test attempts to determine the extent of the pupil's vocabulary, the other seeks to discover the presence of detrimental oral-reading habits.

Experimenters who used this test found children with the following reading defects: (*a*) An extensive vocabulary, but a very slow rate, due perhaps to the persistence of detrimental oral-reading habits. (*b*) A rapid rate but a limited vocabulary with consequent low standard of comprehension ability. (*c*) Limited vocabulary and slow rate. (*d*) A persistence of bad reading habits formed in the first grade, namely, pointing to words, lip-reading, and reading one word at a time. Although this test is designed neither to point out the words which the child does not know, nor to reveal the habits which retard speed, it enables the teacher to get at the root of the difficulty in each case.

Intelligence tests. The child's mental endowment is a factor which greatly affects his reading achievement. One should scarcely expect a pupil of low mentality to make as much progress as the pupil of superior intelligence makes. Theisen has found a marked relationship between progress in reading and the ability of the bright pupil. However, the teacher must not be too ready to ascribe slow progress to lack of mental ability. An investigation which has been reported shows that slow progress is often attributed to lack of intelligence when the cause is really something else.

A number of highly recommended intelligence tests are available. Teachers who are acquainted with those scientific measurements and the method of using them should employ them for diagnostic purposes. If that is not possible, the teacher can get some idea of a pupil's general intelligence by using some of the following suggestions, provided the child is otherwise normal. (1) Have him read a few paragraphs and then coherently reproduce the leading thoughts. (2) Have him read a few paragraphs of well-organized factual material, then outline them briefly. (3) Have him read and interpret a short poem or story. (4) Select thirty words wholly within the vocabulary of a normal child of his age. Allow him sixty seconds to name — not write — the opposites of them. (5) Observe his achievements in other activities besides reading.

Some Reading Defects
Causes and Suggested Remedies

Physical defects. Almost every survey of pupils' achievements in school shows that thousands of children are handicapped in their reading because of physical defects which may easily be remedied.

Recently a study[1] was made in an attempt to show the relationship between mental power, as determined by an intelligence test, and comparative freedom from physical defects. This study, based on an examination

[1]Sandwick, R. L. "Correlation of physical health and mental efficiency." *Journal of Educational Research,* Vol. 1, (March) 1920.

of 423 high-school students, produced significant results. Practically 53 per cent of the pupils in the group having high intelligence scores had no physical defects; every pupil in the group having low intelligence scores had one physical defect or more. "It was noticeable that the defects among the ablest group were not only fewer in number, but also less serious in character. Some of them, indeed, were only temporary. Most of the defects among both groups are entirely remediable. This study supports the growing conviction that good abilities may be and often are masked by the presence of physical defects, and it points to the unmistakable duty of the school to provide for every child early and frequent physical inspection with a systematic follow-up in applying remedies." But since physical inspection of children comes neither early nor frequently in many schools, the responsibility for discovering and helping to remedy the more common physical defects of pupils rests upon the teacher. The pupil's physical condition and his progress in school are so closely related that a physical diagnosis should be made at once whenever he fails to do average work.

Defective eyesight ranks first among physical disabilities which affect reading. Some of the more common symptoms of defective vision are, holding the book at a distance greater or less than normal, complaining of blurred lines or letters running together, irregular eye-movements in following lines, and fre-

quent headaches. Such conditions demand a physician's immediate attention. Instances are not uncommon in which eyeglasses made it possible for pupils who were markedly dull and retarded to do good work within a short time.

Malnutrition due to living conditions may also cause some nervous disorders. It is not difficult to detect this disability. Often a little patient and tactful inquiry will locate the cause and give the teacher an opportunity to suggest a remedy. Proper diet, plenty of fresh air, exercise, regular hours of sleep, and companionship with children who live under better conditions generally solve the problem.

Defective hearing often causes a pupil to be ranked as stupid. In time he may become retarded because he misses much that his teacher and classmates say. It is not difficult to detect this defect, but in most cases the remedy is beyond the teacher's means.

Adenoids and defective teeth frequently cause dullness. In the latter case, the teacher can do much preventive work. Decayed teeth should be discovered and remedied as soon as possible by either treatment or removal, because the poison produced by decomposition is continually absorbed and may seriously affect the general health.

Meager vocabulary. Gray cites[1] the case of a seventh-grade boy that illustrates the handicap due

[1]Gray, W. S. "Individual difficulties in silent reading in the fourth, fifth, and sixth grades." *Twentieth Yearbook of the National Society for the Study of Education: Part II.* Public School Publishing Company, Bloomington, Illinois, 1921.

to a meager vocabulary. This boy was fourteen years and ten months old when the remedial work began. His teacher reported him as a poor student, one who lacked the ability to get ideas from the text. "When asked to tell what he had read, he reproduced a few ideas in short, scrappy sentences." He was tested in both oral and silent reading. In the former he read rapidly, pronouncing the words mechanically and enunciating poorly. He paid no attention to punctuation. The test for comprehension in silent reading showed that he ranked below the poorest pupils in the two preceding grades.

It was evident from these tests that he had learned to pronounce words whose meanings he did not know. The remedy at once suggested itself, namely, the provision of situations that would focus his attention upon the ideas which the words conveyed. Since he was interested in camp and pioneer life, such books as *The Boy Scout's Manual*, Roosevelt's *Winning of the West*, Custer's *Boots and Saddles* were given him to read silently. He was asked to reproduce either orally or in writing parts of the selections read. These reproductions were so meager and inadequate that it was often necessary for him to re-read and work over his assignment four or five times.

It soon became evident that word study would have to be given. The teacher stressed word analysis and word building and pointed out the significance of the stem of a word, and the effects of prefixes and

suffixes on its meaning. The pupil soon came to realize the significance of such words as "recall," "reclaim," "rebound," "regain," etc. Synonyms were also studied. In so far as possible this work was confined to having the pupil discover as many synonyms as he could for some word in his favorite reading. For example, the expression "indomitable hero" occurred in the pioneer stories. Some of the words which the boy gave as meaning practically the same as "indomitable" were "brave," "courageous," "resolute," "manly," "bold," "plucky," and "defiant."

The pupil's progress was measured by comparing his achievements at the end of eighteen weeks with that of another poor reader in the same grade who was not given this training, but who spent the same amount of time in preparing and reciting his lesson in the usual manner and under ordinary schoolroom conditions. The former developed a higher rate in silent reading than in oral. The latter made no improvement in rate. In comprehension the former made far greater progress than did the latter.

Reading to enlarge the vocabulary. The methods used to strengthen the "meaning vocabulary" of the boy mentioned are effective and typical. Doubtless the vocabulary of pupils in any grade can best be enlarged by having them read much interesting material suitable to their ability. The types of material should not be limited. The child has a right to the

spiritual possessions of the race as contained in the best children's literature, in history, stories of travel and of plant and animal life. The reading list given in the Appendix contains many titles bearing on the above subjects. In every classroom there should be a little library of at least ten good books for each of the grades that recite there. These books should be available to pupils who have done the assigned work for the day. If these books are not in the school library, encourage the children to bring their story-books and other interesting reading material from home. By means of a system of exchange each pupil thus has a chance to read broadly. Teachers are often surprised at the wealth of material which may be obtained in this way. If approached tactfully, boards of education and parents can be led to see the wholesome educational value of much supplementary reading. A school social or entertainment will often yield enough funds to start a library.

The language period offers another opportunity to enlarge the child's vocabulary. Class projects, industrial and social, school excursions, school gardens, children's pets, childhood experiences, and stories found in supplementary readers may be advantageously utilized to develop a wide and meaningful vocabulary. Word drills may also be used. They not only aid the child to recognize words quickly, but they enable the teacher to emphasize different uses of the same word in so far as the pupil's ex-

perience allows. Much more can be done for a child's vocabulary through wide reading, however, than by any form of drill.

The subnormal child. Poor reading is too often attributed to low mentality. Hawley reports[1] that out of 109 sixth-grade pupils, twenty-one were classed as poor readers. Only ten of the twenty-one were rated as pupils above average intelligence by mental tests, and only six were rated below. Two of those below the average made substantial progress in the interval between tests. "If their rather low mentality were taken as a full explanation of their poor scores in the first test, it would be difficult to explain how they could make such progress after the tests." An experiment conducted in Dr. Horn's elementary school at the State University of Iowa confirms the above findings. Such data should impress all teachers who are disposed to classify every poor reader as dull.

The kind of remedial measures to be employed in cases of low mentality depends largely on the amount of the teacher's time and the pupil's degree of mental inferiority. If a child is feeble-minded, the regular teacher has neither the time nor special training to do him justice. Nor can she afford to lower the standard of the grade for this particular child. If segregation and instruction by a special teacher are not possible, it is best to let the child go as "un-

[1]Hawley, W. E. "Effect of clear objectives on the teaching of reading." *Journal of Educational Research*, Vol. 3, (April) 1921.

graded." If he is in the second grade in reading and in the fourth grade in handwork, advance him in each subject as rapidly as his capacities allow. One must let him fit in here and there as best he can.

The general intelligence of the majority of subnormal pupils is considerably greater than that of those classed as feeble-minded. If special training could be given such pupils, many of them would become able to do much regular classwork. The difficulties common to the average pupil are very prominent among subnormal children. In the lower grades, the outstanding defects are inability to recognize word groups, meager vocabulary, and irregular eye-movements. Subnormal children more readily develop habits of word naming and pointing. In the upper grades, these unfortunate children seem to lack the ability to get the central thought in a paragraph, to organize the essential points of the lesson into outline or summary form, and to do assimilative reading, that is, collateral thinking of related experiences. The teacher can advantageously apply some of the remedial work suggested on the following pages when teaching the subnormal child.

Word recognition. The ability of pupils to recognize words readily can be quickly and accurately determined by oral-reading or flash-card tests. Hesitation, mispronunciation, substitution, omission, and insertion are the chief evidences of failure to recognize words.

In the lower grades, flash-card exercises and other forms of word drills may be used to develop quick word recognition. So far as possible the words and phrases used in these drills should be those found in the pupil's reading material. Poor word recognition in the second and third grade may be due to lack of training in the use of phonics. Anderson and Merton report[1] the effect of ten lessons in phonics upon the word-recognition ability of a certain boy. Before receiving the special training he was tested on a list of words common to his grade. The table below shows the results of the special training.

Date	Number of Words Attempted	Number of Errors	Percentage Correct
February 18	55	17	61
March 13	368	17	95

The table should be interpreted thus: Before remedial work in phonics was given, the pupil attempted to name 55 words in a given list, and failed on 17; after ten drill lessons, 368 words were attempted, and only 17 were wrong.

One of the most effective means of improving word recognition is to supplement the devices suggested above by supplying the pupils with much easy and interesting reading material. This insures a review of many words in new settings. The ease and rapidity with which the child reads such stories are affected by his command of phonics and his ability to recognize words.

[1]Anderson, C. J., and Merton, Elda. "Remedial work in reading: Part I." *Elementary School Journal*, Vol. 20, (May) 1920.

Even for upper-grade pupils, the flash-card exercise is one of the most desirable types of drill work on quick word and phrase recognition. Such drill has proved beneficial even to college freshmen. Special drills on word building and synonyms suggested by the report of Gray's study mentioned earlier in this chapter are beneficial. Laura Zirbes suggests[1] ten types of lessons for remedial work in reading. A part of the fifth lesson appears below. She has found that pupils need special drill on words that begin or end alike. The following words are suitable for such drill.

when	who	every	even
what	there	never	ever
then	their	than	certain
that	women	man	curtain
how	woman		

Too little emphasis on phonics. In the intermediate and upper grades, many children are retarded in reading by too little emphasis on phonics as well as by too much emphasis on that phase of instruction. We shall first consider a case where the pupil was handicapped because of no phonic training.

Anderson and Merton cite[2] the case of a girl who was struggling along in the fourth grade, although she was unable to read primer material. They determined that lack of a knowledge of phonics prevented her

[1]Zirbes, Laura. "Diagnostic measurement as a basis for procedure." *Elementary School Journal*, Vol. 18, (March) 1918.
[2]Anderson, C. J., and Merton, Elda. "Remedial work in reading: Part II." *Elementary School Journal*, Vol. 20, (June) 1920.

from reading even primer material independently. They then gave the child eleven lessons in phonics and word recognition, teaching six phonic rules in the first six lessons. Eighty-seven words were studied and learned according to those rules. The last five lessons were devoted to a study of phonograms, from five of which 157 words were developed. When the eleventh lesson was finished, 244 words involving six phonic rules and five phonograms had been built up. On March 13 a word test was given containing 225 of these words. A comparison of the results of this test with those obtained from the one given February 18 is shown below.

Date	Number of Words Attempted	Number of Errors	Percentage Correct
February 18	24	7	70
March 13	225	13	94

The efficacy of phonic drill as an auxiliary to word recognition becomes significant when one recalls that only eleven lessons were given to this pupil. Gray's *Oral* and *Silent-reading Tests* were then administered again, and the results compared with the scores made before taking phonic drill and word drill. The errors for the first three paragraphs totaled nine on the last test, as against twenty-nine on the first test. The pupil's scores in quality and rate were higher on the last test than on the first.

It was thought best to follow up these phonic-drill lessons with other lessons which emphasized word

analysis, oral reading for quality and content, and silent reading for rate and quality. The Free and Treadwell Primer[1] was chosen for the beginning work in oral reading because of its rich content so simply told. Twenty-seven lessons of this type were given. Standardized silent-reading tests were again administered at the conclusion of these lessons. The following changes were noted: The rate was more than doubled for both selections in the last test. Quality score changed from 0 in the first test to 35 and 17 respectively in the last test. Lip-movement, which was very noticeable in the first test, occurred now only when the pupil encountered difficult words.

Overemphasis of phonics. Gray reports[2] the case of a fourth-grade girl who was a fluent oral reader but who comprehended very little of what she read. She was asked to read a passage from her fourth reader silently, for the purpose of getting the thought well enough to reproduce it later. She reproduced more or less inaccurately only a very small amount of what she read. Of the questions asked, she answered only one, that incorrectly. After a careful analysis of all available data, the examiner concluded that the child's rudimentary knowledge of the mechanics of reading enabled her to recognize words and to read material far

[1]This is the first book of the Free and Treadwell *Reading-Literature Series* published by Row, Peterson and Company, Chicago.

[2]Gray, W. S. "Individual difficulties in silent reading in the fourth, fifth, and sixth grades." *Twentieth Yearbook of the National Society for the Study of Education: Part II.* Public School Publishing Company, Bloomington, Illinois, 1921.

beyond her comprehension. She read words as names and not as symbols of ideas. The problem was plainly that of training her to read for content.

The remedial exercises consisted of passages taken from second and third-grade readers. The first passage was very short and contained few ideas. Each succeeding passage was somewhat longer and made increasing demands on the reader. When exercises were assigned, the pupil's attention was directed to meanings rather than to pronunciations. "After she had given a reproduction of the story and had answered a number of specific questions about it, she was asked to re-read the selection in search of any thoughts she had overlooked during the first reading. She then gave a second reproduction. This last reproduction was, no doubt, largely a result of the questioning. Nevertheless, it was valuable in training the pupil to see the richness of content in the selection."

The training period lasted for six weeks. One thirty-five minute lesson was given each week; in one week two lessons were given. From five to seven paragraphs were assigned at each lesson according to the plan described. When the silent-reading records of December and May were compared, they showed a decided increase in the rate and quality of the pupil's silent reading. In December she was unable to reproduce a single thought or to answer a single question. In May she was fairly efficient in her ability to reproduce.

SUMMARY

1. The problem of remedial measures is one of the most important phases of reading instruction and probably the least understood.
2. Valuable means and methods of diagnosing reading difficulties are: Standardized tests, informal or teacher-made tests, diagnostic reading scales, and mental tests.
3. The results of an experiment show that 78 per cent of the oral-reading defects in a particular group of children were distributed as follows: Repetitions, 15 per cent; insertions, 24 per cent; omissions, 15 per cent; substitutions, 24 per cent.
4. After using silent-reading tests as a means of diagnosing silent-reading difficulties, the results showed that 79 per cent of the errors can be grouped under the following headings: Meager vocabulary, 33 per cent; inability to find the main idea, 19 per cent; omission of part of the idea due to short span of perception, 14 per cent; inability to concentrate and get specific data, 13 per cent.
5. The factors which prove detrimental to good oral and silent reading should receive the teacher's attention.
6. Among the causes of poor reading are (1) physical defects such as eye and ear trouble, enlarged adenoids, enlarged and diseased tonsils, malnutrition, and decayed teeth, (2) meager vocabulary, (3) subnormality, (4) lack of ability to recognize words.

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CHAPTER VIII

REMEDIAL WORK IN READING (*Continued*)

Persisting Primary-Grade Reading Habits

Pointing to words. Many teachers allow primary pupils to point to words when reading, and to point and read silently while a classmate reads orally. Some teachers even require primary pupils to do that. To devise a more effective method for training pupils to read slowly and listlessly would tax the effort of a genius. In the sample lessons of Part II we have explained the use of a marker which renders the formation of the pointing habit unlikely if used in beginning reading work. However, if the pupils form the habit of pointing when they read, the teacher must take steps to correct it. She should make clear that reading consists in getting ideas from print, and that ideas are more often conveyed by groups of words than by single words. This fact should be illustrated by examples. She should explain that because the eye can see a group of words more quickly than the finger can point to a single word, the good reader is one who reads phrases, or other groups of words, not one who points to single words as he reads. Those who point to each word as they read it can only read in a slow and

drawling manner; good and pleasing expression is for them impossible. The bad habit of pointing when reading can be overcome by having the pupils read interesting and familiar material under time pressure.

Word focus. Making the word instead of the thought unit the focus of attention may be due to overemphasis of phonics, pointing to words, meager vocabulary, overemphasis of oral reading, or an unusually narrow perception-span. Remedial measures for each of these defects are suggested in this and the preceding chapter.

Oral reading. As we have said, overemphasis of oral reading tends to develop the habit of reading slowly because the mechanism of vocalization makes it impossible for a child to read orally as rapidly as he can see words. Buswell's investigation[1] of what occurs when one reads orally has some practical suggestions for teachers. He observed that in oral reading the eye moves along the line of print in advance of the voice, at times keeping very far ahead and at other times very little in advance. Immature and poor readers keep eye and voice very close together; their eye-voice span is narrow. An eye-voice span of considerable length is necessary in order that the reader may get an intelligent grasp of the material ahead, and so read with good expression. Without a long eye-voice span reading is only a series of spoken words.

[1]Buswell, G. T. "The relationship between eye-perception and voice-response in reading." *Journal of Educational Psychology*, Vol. 12, (April) 1921.

A positive correlation exists between wide eye-voice span and mature reading habits. The eye-voice span of good readers in the elementary grades averages 58 per cent more than that of poor readers; among high-school students the good readers have an eye-voice span 36 per cent wider than that of the poor readers. A good reader's eye-voice span is relatively wide at the beginning of a line and relatively narrow at the close. Such readers inhibit voice action until the eye has gained a considerable lead, that is, until they comprehend the first few words. They owe their good expression to looking ahead until they apprehend complete ideas. Poor readers begin voicing words as soon as their eyes see the first word in a line. They should be taught to pause until they get the first complete idea. It is evident that if these principles are applied by those who read orally, there will be little if any poor oral reading.

The perception-unit. A recent article,[1] which emphasizes the importance of developing habits of wide perception-span, declares that it is almost impossible to overestimate the value of developing a broad eye-span in reading. Both Dearborn and Schmidt have shown that the perception-span of the average reader is by no means taxed to its limit. A narrow perception-unit results in word naming, poor comprehension, and monotonous oral expression. Such a condition

[1]O'Brien, John A. "Training in perception as a means of accelerating the silent-reading rates." *Journal of Educational Psychology,* Vol. 11, (October) 1920.

may be remedied by using flash-card exercises for word and phrase drill, by giving pupils definite assignments and exercises which cause them to read for thought, by training them from the beginning to see groups of words and to think in terms of phrases and sentences, by giving them much easy and interesting material to read, and by not emphasizing phonics until the pupils have formed the habit of reading for thought. An early presentation of phonics tends to focus the attention on parts of words and so causes pupils to read single words instead of word groups.

Lack of a knowledge of English. It is not unusual to find pupils who come from homes where English is not spoken or even seen in print except, perhaps, in advertisements. Such children often do poor work and easily become discouraged because they fail to comprehend much of the subject-matter on account of a limited English vocabulary, and because the realization that they speak "broken English" makes them self-conscious and timid. On account of their shyness they are often classed as dull.

The first lessons used in teaching the non-English-speaking child must be directed toward giving him an understanding of the spoken language and an ability to speak it. Reading should be introduced only as it stimulates him and aids him to increase his vocabulary. Conversational lessons based on topics within the range of his interests and experi-

ences, telling and dramatizing stories, sand-table projects, school gardens, and games are excellent means of stimulating expression. The child should be encouraged to participate in the activities of the recreation periods; he will learn much by observing and listening.

After the pupil has acquired a speaking vocabulary which enables him to get along with the group, conversational lessons on topics of interest should form the basis of his reading lessons. The teacher should stress this work, especially when the child is over age and too mature for the simple material found in the primers. Many simple stories and books should be made available. If the pupil experiences unusual difficulty, he should be given special phonic drills.

Inability to use reference books. As early as possible, teachers should help pupils to form the habit of using the dictionary. That is sometimes done even in the third grade. Very often the teacher begins the work in the fourth grade by giving a series of talks on the use of the dictionary. The plan has proved helpful to children because it acquaints them with an auxiliary for use in preparing their reading lessons. From the dictionary they learn the principles of syllabication, accent, correct pronunciation, and how to discriminate among the various meanings of a word.

In order to do satisfactory remedial work in reading, it is often necessary for pupils to have a working

knowledge of the dictionary. This was shown in the discussion of word building, word analysis, and the study of synonyms, as possible remedies for certain reading defects. Other uses for the dictionary arise daily in the reading or language work. The pronunciation, derivation, and uses of a few words should often be made a part of the next day's assignment.

In speaking of the misuse of the dictionary Klapper says:

> Practice in the use of the dictionary should be reserved exclusively for home work and seat work; it should never be given during an oral recitation. It is a common practice for teachers to stop a reading lesson while a word is being looked up in the dictionary by a member of the class. The nervousness which results from a consciousness that the class is watching makes the child who is thus victimized take much longer than usual, and in his excitement he reads off the wrong definition. The spirit and the forward movement of the whole lesson are killed for the petty interest in a word. Despite the pedagogical dictum, "Never tell what the child can find out for itself," the teacher should give the meaning of the word and make no more ado.[1]

The ease with which a large amount of accurate data can be collected by using the alphabetical indexes, tables of contents, and cross references of books, should be demonstrated to all upper-grade pupils. Many teachers now demand that pupils be given special training in finding and collecting in-

[1]Klapper, Paul. *Teaching Children to Read.* D. Appleton & Company, New York City, 1914.

formation in an economical way. Such training should by all means be given and in the most practical manner possible.

The following is a brief summary of the achievements of 256 seventh-grade pupils who were given a test designed to find out whether they knew how to use a book:[1]

58.9 per cent did not make use of the table of contents.
49.5 per cent failed to use the index.
29.6 per cent failed to discover a list of maps.
21.4 per cent could not locate the appendix.
27.3 per cent had no idea of the purpose of a footnote.
23.0 per cent could not find the paragraph headings.
65.7 per cent were unable to discover that the author had provided lists of references for the reader's help and guidance.

A knowledge of the economical use of books is of the utmost importance to pupils when assignments are made by topics, projects, or problems, because such assignments usually require much reading in works of reference. The ease and accuracy with which data bearing on a particular problem may be found in such work appeals to the pupils. The teacher can motivate training in collecting information by asking for special written reports on various phases of some class problem. In a junior high-school class at the State University of Iowa, the teacher assigned each pupil one phase of a certain problem. She then asked each to prepare a carefully written theme and furnish it with a bibliography. Later, each pupil

[1]Finch, Charles E. "Junior high-school study tests." *School Review*, Vol. 28, (March) 1920.

read his paper to the group, the members of which then discussed it and reached certain conclusions. Such work develops good study habits.

Carelessness and carefulness. Teachers have observed that many pupils read very rapidly but carelessly. Burgess[1] reports that some pupils rapidly read the first half of a paragraph, then jump to the next one. Some read paragraph after paragraph at a rate much beyond the standard of the grade, but neglect to follow a single direction or suggestion stated. Many pupils read so rapidly and inaccurately that they fail to note meaningful key words such as "had," "in," "on," "out," "not," "run," etc. Sometimes the meaning of a whole sentence is changed by mistaking "kind" for "king," "man" for "mat," etc. On the other hand, some pupils who read slowly and laboriously are overcareful. They seem not to know when they have finished with a paragraph, but continue to re-read it lest some puzzling statement may be overlooked. Some do not know how to start quickly on an assignment.

The remedial drills and methods of training which one should use for those two types of readers are, of course, diametrically opposed in nature. The teacher should require the careless reader to explain words, phrases, and sentences accurately, and to follow directions carefully. The pupil must use reading material which permits of accurate interpretation. The

[1]Burgess, May Ayres. "Classroom grouping for silent-reading drill." *Elementary School Journal*, Vol. 22, (December) 1921.

teacher must provide the slow and overcareful pupil with exercises which require him to read and think rapidly. She must require him to get the main points of a paragraph from a single reading, and she must help him to develop an aggressive attitude.

Errors made in oral reading. In Chapter VII (page 117) we presented a table which shows the percentage of frequency of the four chief errors made by a group of third-grade pupils. Twenty-four per cent of the errors were substitutions, 15 per cent repetitions, 24 per cent insertions, and 15 per cent omissions of words or parts of words. Since these four kinds of errors comprise 78 per cent of the total of all made, there is an evident need for tested remedial measures in such cases.

Before we can suggest effective remedial measures, we must understand the causes of the errors. Trustworthy investigations reveal that the chief sources of trouble are meager vocabulary, irregular eye-movements, lack of a knowledge of phonics, narrow eye-voice span, narrow perception-units, and inability to phrase or group words in thought units. As these defects also cause difficulty in silent reading, the same types of remedial work may well be given to pupils in both kinds of classes.

Anderson and Merton's experiment. Anderson and Merton report[1] the striking case of a fourth-grade pupil who was a very poor reader. In oral reading,

[1]Anderson, C. J., and Merton, Elda. "Remedial work in reading: Part II." *Elementary School Journal*. Vol. 20, (June) 1920.

repetition and substitution were frequent and he seemed not to apprehend the meanings of the words he read. His greatest difficulty was an inability to phrase, that is, to group the words in idea units. In reading any sentence, words must be grouped in a certain way in order to give the thought the author wishes to convey. This boy did not recognize this fact but divided his words into groups by mere chance. Failing to understand a sentence, he re-read it; he substituted words, then read it again, until he found himself utterly confused.

Remedial instruction in this case consisted entirely of practice in phrasing. It began with sentences written on the blackboard. The boy used vertical lines to mark the phrasing that he considered correct. His first attempt resulted in this division:

One morning | when he went out | very early he saw |

tracks on the snow.

After being questioned he decided to change the phrasing to the following:

One morning | when he went out very early | he saw

tracks | on the snow.

After he had become accustomed to this new way of reading, he began to use a third-grade reader.

In the first lesson the boy read the selection through once without help of any kind. As he read, the teacher kept a record of all errors. He was then given a small card which he was to use for dividing the lines into word groups. He then reread the selection. He placed the card at the end of the first phrase, read it, then placed the card at the end of the next phrase, read it, and continued in that manner until he had finished the selection. At first this was slow and difficult work. He often placed the card after the wrong word, and skillful questioning was necessary to lead him to see his error. After reading the selection two or three times in this way, he was asked to read it without the card. The result showed a remarkable change in this boy's reading. Errors were practically eliminated, phrasing was almost perfect, and expression was greatly improved. The teacher also kept a record of the errors made during the last reading.

Beginning with the third lesson the boy was required to prepare each lesson according to the following plan. He first reviewed the material studied during the previous lesson. The teacher kept a record of all errors, and used it as a check on the last preceding record in order to determine the extent to which memory had helped the pupil. Following that he read the new selection the first time without help. The record of errors made during this reading was kept very accurately in order to determine the

pupil's rate of improvement, since his ability to read at sight was to be the true test of the success or failure of the training. With the aid of the card he then read the selection carefully two or three times. The teacher kept no record of the errors made during this reading. She devoted all her time to helping the pupil with the phrasing. The pupil read the selection the last time without using the card. The teacher kept a record of the errors made during this reading, in order to demonstrate to the pupil the effect of his practice.

In May this boy averaged only 1 error in every 32 words of fourth-grade material read at sight. That was a decided improvement over the February record which showed an average of 1 error in every 7 words of third-grade material. In all, this pupil had only thirty such lessons. During the first ten, based on third-grade material, he read 1,892 words and averaged 1 repetition in every 59 words. During the last ten lessons, based on fourth-grade material, he read 3,045 words with no repetitions. This improvement in the ability to read is the more noteworthy when one considers that during the later lessons the boy read more difficult material, although the recitation period was not lengthened.

Gray's experiment. Gray cites[1] the case of a fifth-grade boy who read slowly because he recognized

[1]Gray, W. S. "Individual difficulties in silent reading in the fourth, fifth, and sixth grades." *Twentieth Yearbook of the National Society for the Study of Education: Part II.* Public School Publishing Company, Bloomington, Illinois, 1921.

only a very small unit at each fixation of the eyes. An investigation of his difficulty showed clearly that he did not recognize words in groups or thought units. In order to provide training in the rapid recognition of word groups, eight phrase books were prepared, in each of which a phrase was pasted on each page. The first book contained ten very simple phrases taken from a primer. Each succeeding book in the series contained the same number of longer and more difficult phrases. The eighth book contained phrases from a sixth reader. In conducting drill exercises, the teacher flashed each page so quickly that the pupil had time for only one fixation of the eyes. As soon as a phrase was exposed, the pupil told what he had seen. Each entirely correct response was graded ten points. This drill was continued for fourteen days. Each day some thirty phrases were flashed. No phrase book was discontinued until the pupil was able to make a perfect score on two successive days. During the fourteen days' drill, six books were used, on five of which the pupil twice scored a hundred.

Flash cards bearing phrases are equally effective for this sort of drill.

The effect of the phrase-book drill in increasing the rate of reading, in the case cited, is shown by the data below:

Lesson	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Words read per minute	60	69	70	79	80	86	86	70	80	95	90	98	100	105

Reading abilities and reading materials. The results of some recent studies discredit the belief in one general reading ability. Rather, there are as many reading abilities as there are types of material and kinds of reading attitudes. The following paragraphs treat of the effects of material and attitude on reading. The Presseys found[1] that pupils who rank among the best when reading narrative material, are often among the poorest when reading general scientific material. The correlation between the scores made in the two examinations is low. The pedagogical inference is clear. Training pupils to read one type of material well does not insure their reading all types well. Each type of reading material calls for a particular method of attack.

Reading attitudes. The type of material often affects the attitude of the reader. Concerning this Parker says:

For example, contrast the attitudes in reading poetry and in rapidly scanning a newspaper column. In the poetry reading your attitude is likely to include enjoying the lilt and swing of the rhythm, and your reading, consequently, will include careful rhythmic phrasing. In the newspaper scanning your attitude is one of selecting much of the material and actively 'grabbing off' a few ideas or statements. Another example of contrasting attitudes in reading is found in reading the 'funnies' in the newspaper and reading Lincoln's Gettysburg address. The emotional 'set' of our mind

[1]Pressey, L. C. and S. L. "A critical study of the concept of silent-reading ability." *Journal of Educational Psychology*, Vol. 12, (January) 1921.

in the case of reading the 'funnies' is such that it shocks us to think of approaching Lincoln's address with the same attitude.[1]

The kinds of exercises used in reading classes should be as varied as the demands made on the reader in connection with his later reading, both in and out of school. The average individual is called upon to utilize reading ability in a variety of ways. He reads for the purpose of giving a coherent reproduction later, or for enjoyment and appreciation. Some scan an article rapidly in search of the answer to some question or problem, others to get the author's point of view or philosophy. Some readers wish to weigh and evaluate the ideas or conclusions in an article, some to discover new problems or new aspects of the topic under consideration. Sometimes one reads in order to organize the main points of an article in the form of a summary.

In addition to having a definite purpose for the guidance of our reading, we need to do much collateral thinking when we read. Lyman calls that "assimilative reading." The idea is illustrated by an interpretation of the following lines from Kipling's "Recessional."

> God of our fathers, known of old,
> Lord of our far-flung battle-line,
> Beneath whose awful hands we hold
> Dominion over palm and pine—

[1]Parker, Samuel Chester. "How to teach beginning reading." *Elementary School Journal*, Vol. 22, (October) 1921.

In reading the last line, how many pupils will image the luxuriant palms of tropical India and contrast them with the tall rugged pines of the northern Canadian forests? Unless the reader does such collateral thinking, he can appreciate neither the extent of the British Empire nor the responsibilities of the British people. Unless pupils are trained to reflect when they read, the words of a poem may be mistaken for the poem itself, although the words are "only instructions as to what to do with our memories and our imaginations, our reason, and our understanding, in order to create within ourselves the story of the poem."[1]

One may ask why some pupils are able to read and reproduce narrative prose and poetry reasonably well, but are confused by highly factual, well-organized material such as is found in textbooks of geography, physiology, nature study, general science, and arithmetic. This is partially explained when one considers that specific training and instruction in reading is generally confined to the reading period, and that narrative prose and poetry are the materials usually read and discussed. It is also likely that pupils read narrative prose and poetry with the "mental set" of enjoyment and leisure, while other kinds of material demand keen analysis, differentiation, evaluation, and organization. The teacher should endeavor to create a proper "mental set" for factual material.

[1]Kerfoot, J. B. *How to Read.* Houghton Mifflin Company, Boston, 1916.

Study habits. Many pupils read all material in the same way. In their textbook reading they devote as much time to trivial matters as to important ones. Even college and high-school students often lack the ability to read with discrimination. The following paragraph is suggestive of what one can do to prevent pupils from forming the habit of indiscriminate reading, and to correct the habit if it is already formed.

If, during a recitation, a teacher never remarks that one thing is more important or less important than another, if she never asks questions that require pupils to judge of relative values, and if she never indicates emphasis when making assignments, or never points out that certain parts of the material should be read rapidly, other parts carefully — how then can she expect pupils to form the habit of varying their rate of reading or to become able to judge when they may profitably do so? Many college students admit that their teachers gave them the impression that any study which was less than a complete mastery of material was not academically respectable.

The important task of the teacher is to get pupils to ask more significant questions, not only during the recitation but also when they are reading and preparing their lessons. The methods which should be employed by the teacher who wishes to stimulate her pupils to do assimilative reading can not be scientifically determined until we discover the characteristics of a skilled silent reader. According to Lyman the skillful reader

is one who reads with a definite purpose, having some problem in mind; one who grasps the author's point of view and central theme, and lays hold on the order and arrangement of his ideas; one who pauses occasionally in order to summarize and repeat, and constantly questions what he reads; one who continually supplements from his own mental stock, judges the value of what he reads, varies the rate of his progress through the reading, and ties up what he reads with problems of his own. The efficient reader does all these things, whether or not he is aware of it.

Whether the teacher accepts Lyman's characteristics of the skillful silent reader, or those given on previous pages, is of little consequence. The important thing is to provide devices, methods, and exercises which will enable pupils to attain those objectives. In other words, teachers must make a direct effort to increase the child's comprehension, and then must help him to formulate a plan for doing those things which enable him to comprehend well. When teacher and pupils realize the definite standards they must attain, and the particular mental habits which must be formed, their work becomes constructive.

Methods for developing assimilative reading habits are discussed and illustrated in Part II. The suggestions advise teachers to give pupils study questions on the following day's assignment, to call for those answers and have them discussed on the following day, to en-

[1]Lyman, R. L. "The teaching of assimilative reading in the junior high school." *School Review*, Vol. 28, (October) 1920.

courage pupils to ask questions in class, to encourage wholesome, thoughtful class discussion and constructive criticism, to teach pupils how to find the central thought in each paragraph and how to outline or summarize the whole lesson, to encourage them to select leading questions for discussion on the following day, and to create in the pupils a critical attitude toward the author's data, point of view, and conclusions.

Thorndike's experiment. Thorndike's study of "The Understanding of Sentences"[1] attempts to determine the fundamental causes of certain types of loose reading. He checked the mistakes made by elementary and high-school pupils who read certain paragraphs, each of which was accompanied by five or more questions which the pupils were to answer. They were instructed to read each paragraph as many times as necessary in order to enable them to answer the questions correctly. The following specimen shows the nature of the material, questions, and instructions used in the experiment.

> Nearly fifteen thousand of the city's workers joined in the parade on September seventh, and passed before two hundred thousand cheering spectators. There were workers of both sexes in the parade, though the men far outnumbered the women.
>
> 1. What is said about the number of persons who marched in the parade?
> 2. Which sex was in the majority?

[1]Thorndike, E. L. "The understanding of sentences." *Elementary School Journal,* Vol. 18, (October) 1917.

3. What did the people who looked at the parade do when it passed by?
4. How many people saw the parade?
5. On what date did the event described in the paragraph occur?

A careful study of the answers to the first four questions showed clearly that the term "fifteen thousand" so obsessed pupils that they could think of little else.

"Over-potent" Element	Question	Response
	1	"passed before 20,000 and 15,000"
	2	"the fifteen thousand"
"fifteen thousand"	3	"fifteen thousand of the parade"
	4	"fifteen thousand"

"Fifteen thousand" is a good example of a word being "over-potent" in reading. This same study reports many interesting illustrations of the under-potency of words, and shows that under-potency is unquestionably the complement of over-potency.

The significance of this study is best shown by the following paragraph taken from the account of it.

There seems to be a strong tendency in human nature to accept as satisfactory whatever ideas arise quickly — to trust any course of thought that runs along fluently. If the question makes the pupil think of anything, or if he finds anything in the paragraph that seems to belong to the question, he accepts it without criticism. . . . This fishing around in the text for something to use, and its use without reorganization, is perhaps the most debased form of selective thinking which school work shows. . . . The extent to which it prevails amongst pupils in even the higher grades shows the need for practice in reading and study. I am inclined

to think, however, that the cure for it is not to repress the verbatim use of wrong, irrelevant, or roughly appropriated quotations, but to permit it plus careful examination of the quotations to see if they really do meet the need. . . . The comprehension of textbooks . . . (is) far above the level of merely "passive" or "receptive" work. When the reading of textbooks . . . is really passive or receptive, comprehension will rarely result. . . . "To read" means "to think" as truly as does "to evaluate," or "to invent," or "to demonstrate," or "to verify."

It is likely that some of the remedial measures suggested on preceding pages would not be considered such (technically speaking) in some research laboratories. We believe, however, that from a pedagogical point of view, any disability that hinders the pupil's reading achievement should be diagnosed, and that remedial measures should then be used.

We have cited several studies which discuss cases typical of classroom conditions, and we have quoted verbatim from some of them. That plan was used so as to help the busy teacher find the kind of difficulty discussed, and to give her a definite idea of the methods to be used for remedial work. The regular classroom teacher's limited time makes the use of an elaborate method impossible. She can, however, group pupils who experience similar difficulties and so obtain more time for drill than when she tries to train pupils individually. Suggestions for the handling of such groups and plans of various sorts for use in instruction will be found in Part II.

SUMMARY

1. Experiments indicate that there is no general reading ability.
2. We must train children to read different kinds of material.
3. An experiment on more than 256 children shows that pupils are unable to use the dictionary, a table of contents, an alphabetical index, or cross references.
4. The overemphasis of oral reading, phonics, pointing to words, and word focus all tend to narrow the child's perception-unit.
5. It is advisable to group pupils of like reading difficulties for specific remedial exercises.
6. Assimilative reading involves the higher mental processes of imagining, evaluating, reasoning, and judging.
7. Specific training to develop a mental attitude for reflective reading should be given.

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CHAPTER IX

MEASURING COMPREHENSION AND RETENTION

The importance of these measurements. The inability of many pupils to comprehend and retain any considerable portion of the material they read is shown by the data given in Chapters III and IV. The chief causes of the low scores reported there are the careless, indifferent, and purposeless reading habits of the pupils themselves.

Thorndike says, "There seems to be a strong tendency in human nature to accept as satisfactory whatever ideas arise quickly, to trust any course of thought that runs along fluently." When reading a paragraph in order to find the answer to a question, the pupil is often willing to accept without criticism the first idea that seems to bear upon the question. This often leads to the formation of a habit of superficial reading.

Breaking bad habits. From a psychological point of view, the most economical way to break up a habit is to present situations which will produce effects that are the direct opposite of it. This being true, an effective method of overcoming slothful, careless reading habits is by frequently testing the pupil's ability to

comprehend and recall what he reads. Definite, brief, written tests are valuable aids to this work because they measure the efficiency of teaching by determining the amount of change which education has produced. Testing is always good teaching because a child learns when he is being tested. The test requires recall, organization, and evaluation of facts and experiences. It shows how much the pupil has accomplished and how well he has achieved, things that he should know. That information may be used to increase the pupil's efforts and his interest in reading; it may suggest certain remedial measures to the teacher. The test helps to develop the ability to read closely, an ability which is important for pupils in the primary grades, who are usually mature enough to comprehend and remember the outstanding points in the factual and expository material which they read.

Principles to be observed. The busy classroom teacher must be brief and definite when she attempts to measure comprehension and retention. Her questions must be concise, and they should require definite data for answers. The tests should require a maximum of thinking and a minimum of writing. The method of measuring comprehension employed in some of the standardized reading tests should either be adapted or adopted outright by teachers who wish to get accurate measures quickly. The following examples taken from Monroe's *Standardized Silent-reading Tests* show the correct method of handling such work.

A silly young cricket, accustomed to sing
Through the warm sunny months of gay summer and spring,
Began to complain, when he found that at home
His cupboard was empty, and winter had come.

Draw a line under the word which best describes the cricket.

wise faithful foolish proud prudent

"Blow, blow, thou winter wind,
Thou art not so unkind
As man's ingratitude;
Thy tooth is not so keen,
Because thou art not seen
Although thy breath be rude."

In the above paragraph with what is the wind compared?

"We have come to dedicate a portion of that field as a final resting place for those who here gave their lives that the nation might live. But in a larger sense, we cannot dedicate this ground. It is for us, the living, rather, to be dedicated here to the unfinished work, to the great task remaining before us."

The above paragraph is taken from Lincoln's Gettysburg Address. What was it he thought we should dedicate? Home, land, lives, money, monument?

Measuring comprehension. The demand most frequently made upon one's reading ability is to read a selection with sufficient care to be able to reproduce the leading incidents or mention main points from memory. That requires an understanding of what one reads, and the retention of a considerable portion of it. Most tests are combined measurements of the pupil's memory and comprehension.

It is often desirable, however, to isolate and meas-

ure only the comprehension ability of pupils, in order to ascertain the scope of their ability to comprehend rather than remember, to determine the extent to which comprehension affects scores made in tests and quizzes, to stimulate careful, thoughtful reading and to make it a habit, and to learn something about pupils' study habits so as to determine the necessary remedial measures. The following lessons are suggestive of methods one may use to measure comprehension alone.

Lesson I

The Sandpiper

Across the narrow beach we flit,
One little sandpiper and I;
And fast I gather, bit by bit,
The scattered driftwood, bleached and dry.

The wild waves reach their hands for it,
The wild wind raves, the tide runs high,
As up and down the beach we flit,—
One little sandpiper and I.

Above our heads the sullen clouds
Scud black and swift across the sky;
Like silent ghosts in misty shrouds
Stand out the white lighthouses high.

Almost as far as eye can reach
I see the close-reefed vessels fly,
As fast we flit along the beach,—
One little sandpiper and I.

I watch him as he skims along,
Uttering his sweet and mournful cry;
He starts not at my fitful song,
Or flash of fluttering drapery.

He has no thought of any wrong;
He scans me with a fearless eye;
Stanch friends are we, well tried and strong,
The little sandpiper and I.

Comrade, where wilt thou be tonight
When the loosed storm breaks furiously?
My driftwood fire will burn so bright!
To what warm shelter canst thou fly?

I do not fear for thee, though wroth
The tempest rushes through the sky;
For are we not God's children both,
Thou, little sandpiper, and I?

This poem describes an incident in the life of the author, Celia Thaxter. As is the case with many other selections, pupils will appreciate it more if the teacher's assignment gives the setting and includes an account of the incidents which occasioned its production. There is evident need of a preliminary discussion, if only to clarify the child's conception of life in a lighthouse on a barren island.

Immediately after the pupils have read the poem through once, either during the study period or in class, the teacher should present the questions given below. Pupils should quietly and quickly write their answers

to the questions; they should refer to the selection as often as necessary. The pupils should grade the papers under the teacher's supervision. When all have finished, one pupil should read the first question and the answer as those appear on his own paper or the one he is grading. In case of disagreement as to the correctness of the answer, refer the pupils to the textbook. This method shows children that reading must be an active, observing, thinking process.

Questions based on "The Sandpiper"

1. Two words tell the kind of wood the girl gathered and the place where she found it. Write the words.
2. What were the ghosts?
3. What else might have gathered the wood?
4. Why were the vessels close-reefed?
5. What line tells whether the bird was flying high or low?
6. Check the two stanzas which you think indicate the kind of night it will be.
7. What two words show best the depth of friendship between the girl and bird?
8. What was the "fluttering drapery?"
9. What stanza tells that the girl is worried about the sandpiper's welfare?
10. What consoled her?

Lesson II

This lesson should be based on *Robin Hood, the Archer Hero.*[1] In using it the teacher should follow

[1] See the footnote on page 282.

a procedure similar to that suggested for use with Lesson I.

Questions based on "Robin Hood"

1. Was Robin Hood or the foresters most to blame in the deer-killing incident which led Robin to become an outlaw?
2. Why was Little John so named?
3. Why did the sheriff hold a shooting match?
4. In what three ways did Robin Hood disguise himself so that the sheriff might not know him?
5. What is the point of highest excitement in the chapter?
6. Select the most witty line in the chapter.

The teacher may use the two sets of questions given for definitely measuring the pupils' ability to comprehend the selections on which they are based. She may also use them to direct the pupils' reading during the study period. Since they require brief, definite answers they are easily graded.

How to Measure Comprehension and Retention

Reproduction. The reproduction method consists in having the pupils reproduce as much of a selection as they can after reading one or two minutes. Formerly this method was very popular as a means of measuring comprehension and retention. Recently it has become less so. A recent criticism of the method is as follows.

The scoring of the reproduction is based on the num-

ber of ideas reproduced. In correcting the material it is very difficult at times to determine whether the idea had been reproduced by the pupil or not. In many other instances, it is perfectly clear that instead of reproducing the paragraph which he has just read, the pupil brings into the reproduction many ideas based upon his experience.

Gist says of this test:

Many pupils can give from memory what they have read without being able to answer questions based upon the thought. Questions directed so as to bring out the thought seem to secure better results than asking the pupils to tell what they have read.[1]

It is generally conceded that the use of the reproduction method tends to cause one to mistake fluency of expression for detailed knowledge. Many teachers believe that it tests memory rather than comprehension. Moreover, the task of correcting the results is such a heavy one that that feature alone deters many from using it.

Completion tests. Some form of completion test is held in high favor by several experimenters. The following examples are taken from Starch's *Geography Test: Series A.*

1. The tropics are ——— degrees on each side of the equator.
2. About —— —— of the earth's surface is land, and —— is water.
3. —— —— is melted rock coming from a volcano.

[1]Gist, Arthur S. "Silent reading." *Elementary School Journal,* Vol. 18, (September) 1917.

Teachers who use the completion test usually place the statements on the blackboard and require the pupils to write only the words needed to fill the blanks. Such tests can be given quickly, and the scores can be readily determined. If the test is skillfully constructed, the teacher has a fairly accurate measure of the pupils' ability to comprehend and retain the ideas read. This test practically eliminates the verbosity which pupils sometimes indulge in.

Recognition tests. This test is based on the assumption that one often comprehends what he reads but is unable to recall much of it when tested by the ordinary oral or written quiz. One may, however, be able to recognize the truths or facts included in the matter read when those appear in conjunction with other data. The following is an example of the recognition test.

1. Boston is the capital of Maine, Massachusetts, Rhode Island, New York.
2. The most southern state in the United States is New Mexico, Texas, Oregon, Florida.
3. The corn belt is in the Western States, the New England States, the Southern States, the Central States.

Whether this test is given orally or written on the blackboard, the pupil is to write down only the correct words. This test forms a part of several standard measurements of general intelligence. Little time is necessary to give the test and to score the results. The error which might come from the operation of the law

of chance is largely cared for in that there are four possible answers to each question.

The question method. The type of test which most teachers use and will likely continue to use is some form of direct question. However, the other tests described ought to be employed to supplement this direct-question method, because a more accurate measure of the pupil's reading ability is assured when several tests are used. A variety of tests also relieves both pupils and teachers of the monotony of testing. Brevity and definiteness should be the criteria of every direct-question test. The studies reported on the following pages suggest types of questions that may be used as measures of comprehension and recall.

Miss Waldman reports[1] an experiment in which she succeeded in increasing the reading comprehension ability of a fourth-grade class. The following questions and answers are typical of the means she used to determine comprehension. She selected the material from the story[2] of "Davy and the Goblins." The pupils read the selection expecting to be tested for a knowledge of its content.

Questions based on "Davy and the Goblins"

1. Who said, "Oh, if you please, I can't go"?
2. Who said, "Rubbish! Ask the colonel"?

[1]Waldman, Bessie. "Definite improvement of reading ability in a fourth-grade class." *Elementary School Journal,* Vol. 21, (December) 1920.

[2]This selection appears in the *Riverside Fourth Reader* published by Houghton Mifflin Company, Boston.

3. Who was a silly looking little man made of lead?
4. Where did he stand?
5. What did he hold in his arms?
6. Who felt quite safe in looking up at him and asking permission to go on the Believing Voyage?
7. Who nodded his head and cried out in a little cracked voice, "Why certainly"?
8. Who jumped down off the knob of the andiron?
9. What fell over on its face upon the floor, as softly as if it had been a feather bed?
10. What was really a sort of boat?

Correct Answers

1. Davy	6. Davy
2. Goblin	7. Colonel
3. Colonel	8. Goblin
4. Mantelshelf	9. Clock
5. Clock	10. Clock

Many teachers have little faith in the so-called "memory" or "information" question. They believe that the teacher's questions and the textbooks should stimulate inference, deduction, and judgment. The popularity of the problem-project method of teaching and of the modern textbooks which are based on that method indicate that the attitude is at present common among educators. This is the sign of a wholesome educational tendency.

But can there be constructive thinking without something to think about? Are not the facts of the case

as necessary outside the court as within it, if justice is to prevail? Is it not possible that we may have overworked the case against memorizing and memory work, rote memory excepted?

Buckingham[1] tested 159 eighth-grade pupils with two types of history questions, the memory or information type, and the reasoning or judgment type. His conclusions stated in the following paragraph, based on data derived from the experiment, should challenge all contrary and merely opinionated statements.

> The steps we have taken may, therefore, be summarized as follows: 159 eighth-grade children have been tested in a series of information (memory) questions, and likewise in a series of thought questions, and the relationship between their achievements in these two series of questions permits us to conclude that a test of the memory ability of school children in history affords a reasonably accurate index not only of memory ability itself, but also of ability to think. Wherever it is practicable to do so, however, children should be tested directly on thought questions, that is, on questions of inference and questions requiring reasoning and a judgment of values. Ordinarily, however, testing is carried out with larger numbers of children, and the answers have to be handled quickly. In such a case, the ease with which an information (memory) test may be administered and rated is a decided advantage; and it is some satisfaction to know that, from the results, reasonably accurate inferences may be drawn regarding types of ability other than those directly tested.

[1]Buckingham, R. B. "Correlation between ability to think and ability to remember, with special reference to United States history." *School and Society,* Vol. 5, (April) 1917.

The following questions are taken from Buckingham's study.

HISTORY: THOUGHT QUESTIONS: SERIES A

Read each quotation and then answer the question below it.

"We, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity . . . "

Explain what is meant by the words "in order to form a more perfect union."

"In 1790, ninety per cent of the people of the United States lived on farms. At the present time only thirty per cent of the people live in the country."

How can you account for the change suggested by these facts?

HISTORY: INFORMATION (*Memory*): SERIES A

1. Who were the Copperheads?
2. Who discovered the Mississippi River?
3. What event started the colonization of Colorado?
4. Give the principal reason advanced by the French for claiming the Mississippi Valley in 1754.

Acting upon a suggestion in Buckingham's investigation, Mendenhall[1] made a study in which he attempted to find the relationship that exists between knowing something about a subject when a minimum time is allowed for preparing the report, and knowing much more about the same subject when a maximum time is

[1]Mendenhall, W. L. "Relative values of short and long tests." (An unpublished study prepared at Des Moines University in 1922.)

allowed. He assigned two chapters dealing with the problem of discipline to seventy-one freshmen and sophomore students in a normal-training class. The following day he gave the two following questions as subjects for a written quiz.

1. Name five causes of bad discipline.
2. Name five remedies for bad discipline.

He allowed only three minutes for answering both questions. Following that the students were told to use fifty minutes for preparing a written discussion of the causes and remedies which they had named during the three-minute test. Every student but one could discuss the causes he had named. The discussions ranged from fair to excellent. Those who could name the most causes in the shorter period could explain the most in the longer period. The data obtained by Mendenhall lead one to conclude that the short memory test based on factual material is a fairly reliable measure of a pupil's ability.

The true-false test. This test is now coming into favor among teachers. The method used in some of the standardized measurements is applied to the teacher-made or informal test. The following account of one of these tests shows its nature.

The teacher asked a sixth-grade geography class to read an assignment on New England. She then explained that she would read a list of twenty statements based on the assignment, and that of those statements some were true, others false. If the pupil considered

a statement true he was to make a plus sign, if he thought it false he was to make a minus sign. The teacher read the statements at the rate of one every thirty seconds.

1. The New England States comprise an area greater than that of the Southern States.
2. Montpelier is the capital of Maine.
3. Most of the rivers flow north and east.
4. Fishing is an important industry.
5. The largest state is Massachusetts.
6. New England has many thriving cities.
7. The surface is for the most part rough and broken.
8. Harvard University is located in New Haven.
9. The people of New England are noted for their intelligence, enterprise, and industry.
10. Champlain is the largest river.
11. The chief exports are cotton, wool, iron, coal, and articles of food.
12. Boston, the metropolis, has an excellent harbor.
13. Little attention is paid to lumbering and shipbuilding.
14. Cotton, woolen goods, and machinery are among the chief manufactured articles.
15. The White Mountains are in Vermont.
16. Lowell, Lawrence, and Fall River are noted for cotton manufacturing.
17. Newport, on the Connecticut River, has a United States arsenal where rifles and other arms are made.
18. There are six states in the New England group.

19. The leading exports are lumber, ice, granite, marble, and all kinds of manufactured goods.
20. New England is well fitted for manufacturing, on account of the great abundance of water power afforded by its rapid streams.

This test was given, scored, and the results recorded in approximately fifteen minutes. Each pupil's final score consisted of the number of correct answers minus the number of wrong ones. A pupil who answered eighteen questions correctly and two incorrectly scored 16 points or 80 per cent.

The method of scoring. The following explanation should make clear why a pupil's score is expressed in terms of the number of correct answers minus the number of incorrect. Let us imagine a pupil with no knowledge of New England whatever. Were he to take the test outlined above, answering every question in some way, he would, according to the theory of chance, answer ten questions correctly, ten incorrectly. The chances of his guessing right and wrong answers are equal. According to the method of computation used, such a pupil's score on this test would be $10 - 10 = 0$. Such a score properly represents that pupil's complete lack of knowledge. Suppose, now, that the pupil knows the correct answers to ten of the questions, but that he guesses the answers to the other ten. Of the latter, according to the theory of chance, he would answer five correctly and five incorrectly. Even though his actual knowledge enables him to answer only ten ques-

tions correctly, he will have fifteen correct answers and five incorrect. The method of computing his score reveals his actual knowledge: $15 - 5 = 10$. The pupil who answers every question correctly has a score of 20 because according to this method of computation $20 - 0 = 20$.

It is difficult for some to believe that such a test does other than give the highest score to the luckiest guesser. They look suspiciously upon this thing called "chance." Regarding this McCall says:

> Being in a position which offered excellent opportunity, namely, treasurer of a Sunday school, we once tossed pennies for heads or tails fifty thousand times. The results came out 25,000 heads and 24,999 tails. Had there not been a miscount somewhere, the two would doubtless have come out exactly even. We had occasion to watch two summer-school teachers engage in that soul-absorbing, nerve-racking game of chance called "matching pennies." Each began the summer with a special bag of one hundred pennies. They matched for several minutes daily. The last we heard they were still matching pennies and chance had prevented either from getting complete possession of the other's one hundred pennies. Chance is fatally exact when the pennies or the statements in the test are numerous. The opportunities for injustice in scores multiply in proportion as the number of statements is reduced. Hence there should be as many statements in the test as practical limitations will permit.[1]

Teacher-made true-false tests. The following suggestions may help teachers who wish to use the true-

[1] McCall, W. A. "A new kind of school examination." *Journal of Educational Research,* Vol. 1, (January) 1920.

false test either as a check upon the reading ability of the pupils over some definite assignment or for a formal examination on a certain piece of work. Construct the test so that it will contain approximately the same number of true and false statements. Vary from this occasionally lest some clever pupil count back to see how many more true statements have been marked than false. Let chance (the tossing of a penny) determine how many statements shall be true and how many false, and in what order the true and the false shall come. Unless one resorts to some such device, one's arrangement each time is likely to be practically the same. See that the statements are free from ambiguity. Do not ordinarily make leading statements which will suggest wrong answers. The true-false test may not be as diagnostic as the conventional long essay type. As it does not show how the pupil's thinking process went astray on a problem, it is well to supplement it with a more detailed test.

Gates' experiment.[1] Gates has recently determined the reliability of the true-false tests by extensive experimenting. He compared the scores made by students who took these tests with those made by the same students when they took three other types of test, (1) a one-hour and two-hour mid-term and final written examination, (2) written home work consisting of essays on special topics, (3) the *Army Alpha Test* or the *Thorndike Intelligence Test.* He made comparisons not

[1]Gates, Arthur I. "Reliability of the true-false test." *Journal of Educational Psychology,* Vol. 12, (June) 1921.

once but often. He found that when a number of true-false tests were given the student's rank remained practically the same throughout the series. This was not true of the ranks determined by the written examinations. He also found that scores made by students who took a series of true-false tests showed less variation than when they took a series of any other kind of tests.

Advantages of the true-false test. Those who have given these tests, and those who have taken them, agree that their use saves teachers much time. They dispense with the task of correction, because each pupil scores his own paper. This self-correction feature also makes the test a valuable instructional device. True-false tests enable teachers to develop standards of achievement by means of which the work of one class may be compared with that of another. They also enable one to test over a field of material wider than one can cover when the conventional examinations are used. They furnish more refined units of measurement than the usual type of examination gives, because the distribution is wider. Students report that these tests require them to use more effective methods of study, to understand and apply facts, not merely to commit to memory for purposes of later reproduction. It has been determined by actual count that at least 90 per cent of students prefer this type of test, because it gives them the results of their examination as soon as the test is concluded and so relieves them of the suspense

caused by waiting for papers to be marked. Students say that after the initial adjustment they usually feel less nervous during the examination, and that the true-false test is less exhausting because it causes little if any eyestrain and no worry about one's ability to complete the examination within the prescribed time limit. In addition to its value as a test, the true-false examination is an excellent teaching instrument. The immediate correction of answers clears up haziness, misunderstanding, and ignorance of facts, and at the same time clearly shows principles.

SUMMARY

1. Careful testing to determine pupils' ability to comprehend should be a part of educational practice.
2. By means of tests, pupils and teachers are enabled to determine with what thoroughness the reading is done.
3. Tests aid in the formation of purposeful reading habits.
4. Well-organized, informational material such as is found in textbooks of geography, history, hygiene, nature study, and arithmetic is suitable for testing purposes.
5. Poetry and other literature adapted for appreciative reading should not be used as a basis for thorough comprehension tests.
6. Brevity and directness should characterize the teacher-made test. The methods employed in the making of the standardized tests may be profitably followed.

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CHAPTER X

MATERIAL FOR SILENT-READING PURPOSES

Various kinds of material necessary. If we are to develop the children's silent-reading ability to the utmost, we must give them much practice in reading various kinds of material. We must no longer believe that one book contains all that a child should read in a year. We must give him access to an abundance of material which is within the range of his interests and comprehension. In this chapter we shall discuss the essentials of satisfactory reading material and suggest where the teacher may obtain it.

Investigations have proven that children need different kinds of reading material if they are to obtain the best results from their work in reading, because the ability to assimilate what one reads depends to a large extent on the nature of the subject-matter. There are as many different silent-reading abilities as there are different kinds of reading material.

Presseys' experiment.[1] The Presseys have shown by experiment that there is no general silent-reading ability, that one who reads one kind of material well

[1]Pressey, L. C. and S. L. "A critical study of the concept of silent-reading ability." *Journal of Educational Psychology*, Vol. 12, (January) 1921.

may read another kind poorly, and that the ability to read well silently depends very largely upon the nature of the passage read. The material which they used in an experiment conducted with 112 seventh-grade pupils consisted of four reading scales, each composed of a particular kind of reading material. For the most part the exercises were taken from the *Monroe Reading Scale* and from the *Illinois Examination.* One scale consisted entirely of poetry, another of passages of scientific subject-matter, and the other two were composed of selections taken from stories and general reading matter. The latter are known in this experiment as "General I" and "General II." The coefficients of correlation[1] of all possible combinations based on the four scales were as follows:

Scales	Coefficient of Correlation
Poetry with General I	.38
General I with General II	.85
General II with Poetry	.31
General I with Scientific	.35
General II with Scientific	.49
Scientific with Poetry	.56

The following specimens show the kind of material included in each of the four scales used in this experiment.

[1] A perfect correlation (relationship) between the scores made when reading any two types of reading material is indicated by a score of 1.00. If, when reading one of the selections included in this experiment, for example, "Scientific," the rank of the pupils had been 1, 2, 3, etc., and if the rank had been the same when they read another selection, for example, "Poetry," then the correlation between the two types would have been perfect, and consequently represented by a score of 1.00.

Poetry

Oh suns, and skies, and clouds of June,
And flowers of June together,
You cannot rival for one hour
October's bright blue weather.

Which month does the stanza say is the most pleasant?

April September May June October

General I

The caravan, stretched out upon the desert, was very picturesque; in motion, however, it was like a lazy serpent. By and by, its stubborn dragging became intolerably irksome to Balthasar, patient as he was.

Place a line under the word which tells in what respect the caravan resembled a serpent.

temper color length motion size

General II

It was the garden-land of Antioch. Even the hedges, besides the lure of the shade, offered passers-by sweet promises of wine and clusters of purple grapes. Over melon patches and through apricot and fig groves and groves of oranges and limes, the whitewashed houses of the farmers were seen.

What kind of land was this? Draw a line under the correct answer.

barren hilly productive infertile desert

Scientific

The tighter the wire is stretched, the higher will be the tone produced when the wire is struck. Five wires were stretched with weights on the ends of them. One weight is 100 pounds, one is 75 pounds, one is 25 pounds, one is 20 pounds, and one is 15 pounds.

Underline the number of pounds in the weight which will cause the highest tone.

100 75 25 20 15

Zirbes' report. This investigator says: "There are many silent-reading abilities; training to be economical must be special. Psychological analyses of the abilities involved in the reading curriculum must be made to the end that the technique employed, and practice upon desirable content, may be placed upon a scientific basis.[1]

Wilson's experiment.[2] Shortly after the above quotation appeared, Estaline Wilson reported an elaborate experiment which confirms Zirbes' contention. In a later study, mentioned in Chapter XV, she has definitely pointed out the particular method to be employed in teaching pupils to read arithmetic problems more effectively.

The experiment reported below included pupils from grades five to eleven. Six different types of material were used — arithmetic, civics, grammar, geography, poetry, and narrative. The method employed, the data gathered, and the conclusions drawn in this experiment are suggestive enough to warrant the following rather detailed report.

Teachers find that pupils who read selections from their readers very well do not show the same ability when they try to read their textbooks of geography

[1]Zirbes, Laura. "What are the situations in which reading functions?" *Journal of Educational Psychology*, Vol. 12, (March) 1921.

[2]Wilson, Estaline. "Specific teaching of silent reading." *Elementary School Journal*, Vol. 22, (October) 1921.

and arithmetic. The variation appears in the scores made by pupils measured by different standard reading tests. The explanation which suggests itself for these facts is that reading abilities vary according to the types of material with which the pupil deals. Ability to read literary selections seems to differ from ability understandingly to read problems in arithmetic; ability to read geography differs from ability to read poetry.

In order to test the validity of the explanation suggested, a number of Cincinnati teachers gave their pupils a series of tests which included different kinds of material — arithmetic, geography, civics, grammar, narration, and poetry. In so far as possible this material was selected from books designed for use in the same grade. No test contained vocabulary difficulties. The material, followed by questions, was printed on single sheets with questions below. The questions were such as the average teacher would ask to test the comprehension of similar reading material in an ordinary class assignment. The answers to some merely required the selection of facts; other answers required judgment. Instructions were printed at the top of each test. The pupils were told what the material contained. "These paragraphs tell you how hair nets are made." "These problems tell the story of a family who took an automobile trip." "You may read as often as necessary to answer the questions. Work as rapidly as you can."

The teacher made no attempt to control the time, as the only element to be measured was the pupils'

ability to comprehend various kinds of subject-matter. The tests were given at the same period on successive days; in both instances conditions were as nearly uniform as possible. The following specimens show the types of material used.

TEST IN READING ARITHMETIC MATERIAL

The following problems tell the story of a family that took an automobile trip. You are to read the problems and answer the questions printed below, but you are not to work any of the problems. You may read them as often as is necessary to answer the questions. Work as rapidly as you can, and number your answers just as the questions are numbered.

1. The Brown family took a two week's trip in their automobile. They went 975.6 miles in all. They did not ride on Sundays. How far did they go per day on the days that they did ride?
2. It cost $21.32 for gasoline, $2.80 for oil, and $4.75 for repairs. Mr. Brown estimates the wear and tear on automobile and tires at 3¼ cents per mile. Using this estimate, what was the total cost of running the car on the trip?
3. They spent twelve nights and had twelve breakfasts at farm houses or small hotels. Twice they paid $1.75 for lodging and breakfast for the family. Five times they paid $2.00. Four times they paid $2.50. Once they paid $3.50. What was the total cost for lodging and breakfast?
4. They bought food at stores and bakeries for their noon and evening meals, spending $17.57 in all for the fourteen days. (*a*) How much did their noon and evening meals cost per day? (*b*) They expected to spend $1.40 per day. How much less did they spend per day than they expected?

Questions

1. How many days were the Brown family using their automobile while on their trip?

2. What different things did Mr. Brown consider in figuring the cost of running the car?
3. In what different places did they get something to eat?
4. For how many days did they need to buy food?
5. How many different prices are given as costs of breakfast and lodging?
6. Why could you not find what the cost was for each member of the Brown family?

TEST IN READING NARRATIVE MATERIAL

The following story tells you about an automobile accident. You may read it as often as is necessary to answer the questions. Work as rapidly as possible and number your answers as the questions are numbered.

Not long ago some of the people in our neighborhood had a picnic over on Deer Creek. Soon after we arrived at the picnic grounds it was discovered that someone had forgotten the watermelons, and Nick Lathrop at once volunteered to go back to town after them; he is a good fellow and no one can help liking him. So away he went, and the last we saw of him he was going so fast everybody thought he would be back in ten minutes.

The women began getting supper ready, and when Nick didn't come back in half an hour we all began worrying, particularly his wife, who was always expecting something to happen. Eddie Batty and Walt Bell went out to see what the trouble was.

This is what had happened: Nick was rushing along after the watermelons, and hurrying, as supper was late anyway. Suddenly, ahead of him, in the dark, loomed up a red light. Nothing makes Nick Lathrop so impatient as a car ahead of him, and when he saw the red light he thought it was the tail light of a car, and made a dash to go around it. The red light turned out to be a lantern to give warning that a bridge was out. Nick went into the creek at sixty miles an hour, and when Eddie Batty and Walt Bell brought him back he was a sight.

Questions

1. Where were these people when this story happened?
2. What was Nick going after?
3. How long did the crowd think it would take Nick to go to town and back?
4. Why was his wife worried?
5. What bad automobile habit did Nick Lathrop have?
6. What fooled him?
7. Do you think he was lucky or unlucky?
8. Give the reason for your answer to the last question.

Results of Wilson's test. The scores shown below were made by the pupils of two schools. They are representative of the results obtained on five types of reading material.

	Arithmetic	Grammar	Geography	Poetry	Narrative
Winton Place					
Grade V					
Number tested	43	43	43	43	43
Class median	66⅔	100	80	66⅔	87½
Range	0–100	66⅔–100	30–100	16⅔–100	38½–100
North Fairmount					
Grade VII					
Number tested	28	28	28	28	28
Class median	75	100	90	83	87½
Range	41–91	33½–100	50–100	33½–100	50–100

The above figures show in general the variation in the ability to comprehend, due to the change in subject-matter. The scores uniformly indicate that the reading of arithmetic was poor and that the reading of the informational and narrative material was better. The greatest range of ability appears in the scores based on the grammar and arithmetic material, but there

were striking cases of variation in the scores made by certain pupils when reading other material.

Causes of variation in scores. The variation in scores is doubtless due to lack of definite training which makes the reading of arithmetic as easy as the reading of narrative material. Failure to answer the questions based on the arithmetic material was not due to a demand for calculation or arithmetical reasoning, because the questions in this test were merely factual. The sixth question was the only one that required a knowledge of an arithmetical principle. As individuals, pupils answered this question more often than they answered others.

Practice in reading informational and narrative material may account for the scores made on those tests. Pupils generally are trained to read material of this kind and to answer questions based on it. Even poetry, with its obscure sentence structure and less familiar vocabulary, presents fewer difficulties than arithmetic, because modern textbooks and teachers have developed a method of getting at its meaning.

The relative difficulty of different kinds of subject-matter at once becomes a question. Obviously the various selections are not equally difficult, but this is probably because of the lack of definite training in the formation of reading habits It remains to develop methods of teaching reading suitable to various kinds of material, before any conclusive weighting of sentences can be made.

Types of material. Since the aim of silent reading is not merely to make the pupils proficient in word recognition, but also to develop the ability to get the gist of an article quickly and efficiently, the exercises and material must be of such character as to call forth efforts that will produce the desired results. The lesson must be attractively written in choice English, and the subject-matter must be within the range of children's interests and comprehension.

The aim of any exercise largely determines the type of material that should be used. For example, the story can be used effectively for speed drills, provided it is long enough to tax the speediest reader to his utmost within the time limit. The merit of the story as reading material lies in the fact that the child is anxious to see how it ends, and consequently reads rapidly; interest in the tale insures comprehension.

Highly factual, well-organized subject-matter is excellent for drill in comprehension and organization. Exposition and detailed description are also satisfactory. Directions for class projects are very valuable, because the pupil must read purposefully and understandingly in order to participate in the project. Reading material for drill purposes should seldom be presented in summary form, because it deprives the pupils of excellent practice in organizing and summarizing material.

Sources of material. As has been said, no one type of material is adequate for teaching silent reading. The greater the supply of kinds of subject-matter, the bet-

ter it is for both teacher and pupil. There are at least four reliable sources of reading material which are available to every teacher: The various school readers, textbooks, library books, pamphlets or bulletins. The respective merits of these are discussed on the following pages.

The school reader. Unfortunately too many teachers use only one book — the regular school reader. Much of the content of the readers is good, but no one book contains sufficient material for a year's work. The class reader is not made for silent-reading purposes alone, but for oral reading as well. The subject-matter of readers is chiefly of value in developing a love for reading and for purposes of speed exercises. If pupils are given a time limit in which to read an interesting story, their desire to finish it will cause rapid reading. Much practice of this sort will habituate long, rhythmical eye-sweeps, few regressive movements, and fixation-points of short duration, thus aiding in rapid reading. Stories should be read again and again, because wider perception-units are possible when familiar material is used. Knowing the content, the pupils are able to guess ahead or read "out of the tail of the eye."

One danger of using the reader for silent reading is that overzealous teachers tend to believe that they must thoroughly test the pupils' comprehension of every story and poem. Teachers must remember that the material in the ordinary reader is largely narrative prose

and poetry, which was selected primarily to cultivate appreciation. Generally, it needs no detailed analysis. The fact that children read it and enjoy it is assurance that they comprehend it.

For example, the pupils may be asked to read the story, "The Boy Who Cried 'Wolf'," so that they can dramatize it for another group. This stimulates the reading and necessitates their knowing that the boy was herding sheep in a lonely spot near the home of wild animals, that he became tired and thought he would have some fun, and so played a trick on the men working in the field. It is little short of criminal, however, to test the pupil's understanding of it by asking such questions as: What did the boy do? Where did he tend the sheep? What is a forest? Was it a dark forest? How many men worked in the field? Where was the field?

The teacher should, however, ask some questions even about this story. They need not be detailed as to time, place, manner, etc., but they should be such as will test the pupil's interpretation of the entire selection. The aim is to help pupils acquire the habit of judging and evaluating when they read. Questions that require interpretation and furnish a basis for discussion help children to do that. A teacher is justified in asking the following question about the above-mentioned story: "Do you feel sorry for the boy? Why?" Whether the children's answer is negative or positive, there is still room for much argument. Out of the discussion

will come a true interpretation of the story. Stories should be read in order to give children something to appreciate. To subject a child to a detailed questioning, either before or after he has read the story, robs him of much of the joy of it and defeats the aim of reading.

Who of us cannot recall an overconscientious teacher who practically destroyed the charm of a fascinating tale by attempting to discover whether or not we understood the meaning of every word, and whether we were getting the full connotation from each sentence? Such interesting material is of great value, but it should not be misused.

Library books. The library is a valuable source of supply for material for silent reading; students should be urged to use it freely. Story-books, fairy tales, and myths contain material that always appeals to pupils. Allowing students to read stories to dramatize or act in pantomime before the rest of the class assures comprehension; their desire to find out how the story ends conduces to rapid reading. Lists of books suitable for such work are given in the Appendix (pages 357-381).

Textbooks. A special series of readers to be used for silent reading is unnecessary. Silent reading can be based on any good readers; the subject-matter in the regular textbooks of geography, history, and hygiene furnishes excellent material, which is suitable for comprehension exercises because it is factual, detailed, and

usually well organized. Various specimen lessons showing how to use such material are presented in the following chapters.

The use of geography and history texts for silent reading answers the objection of the teacher who claims that her already overcrowded schedule allows no time for silent reading as such. Naturally, she feels that with so many classes it is impossible to allow each grade even ten minutes per day for drill in silent reading or methods of study. However, since silent-reading exercises may be conducted in conjunction with the lesson in geography, history, or hygiene, the time difficulty is removed.

Very effective drill in speed and comprehension is obtained by using the last five or ten minutes of the recitation period to have pupils read the text assignment under time pressure, then subjecting them to a test on the leading points. The few minutes thus spent help to form habits of rapid and purposeful reading. The test also gives pupils a start on the mastery of the next day's assignment, because it indicates what important point they failed to grasp during their first rapid reading.

Pamphlets. Unfortunately, many libraries contain but few books, and those poor ones. This compels the teacher to look elsewhere for material to use in silent-reading classes. Her problem is to obtain vital, well-written reading matter that is suitable for the various grades, at minimum cost and in quantities that will enable her to supply an entire class.

The situation is not so discouraging, however, as it at first seems. It is generaly known that pupils are intensely interested in all questions which are really problems of the home, school, community, or state. An abundance of material dealing with all sorts of questions pertaining to home-making, health, civics, agriculture, entomology, etc., is available in pamphlet form. Those can generally be obtained free of cost or for a small charge. Subjects which should be discussed in all grades are treated in these pamphlets. One may obtain articles from various sources on the fly menace, the treatment of contagious diseases, the care of the teeth, the value of fresh air, the care of milk, the disposal of garbage, the method of growing various crops, their value, soils, gardens, pests, and on many other subjects. Generally the content is presented in the form of problems. It abounds in detail and contains many descriptive passages which make it splendid material for training in comprehension and organization.

Few of these pamphlets can be used in the beginning grades, but they afford factual material for the teacher who cares to write selections suitable for primary pupils. An article on the house fly, well written in a popular style, but which could not be profitably used in grades below the third nevertheless contains information about the fly as a carrier of disease and as a factor in infant mortality which is readily understood by a six-year-old pupil. By adapting the content to the class, and printing these exercises on the blackboard

or on tag board, the teacher obtains source material for twenty or more live and worth-while reading lessons.

The Appendix (pages 357-381) contains lists of pamphlets, some of which may well be studied in the classroom. Practically all are supplied free of cost. If the company or government department which publishes the material listed is unwilling to supply duplicate copies, the teacher may have each pupil send for his own. However, if the teacher explains the use that she expects to make of the material, her request for duplicate copies will usually be granted.

SUMMARY

1. If pupils are to become efficient readers, they must have access to much easy reading material.
2. Experiments indicate that there is no general silent-reading ability, but that efficiency in reading varies with the type of subject-matter.
3. Since there are apparently as many reading abilities as there are types of material, pupils should receive specific training in reading various kinds of subject-matter.
4. The aim of an exercise in silent reading largely determines the type of subject-matter that should be used.
5. Available sources which enable the teacher to present to the pupils the various types of subject-matter are the basic reader and supplementary readers, textbooks of history, geography, hygiene, and civics, and pamphlets pertaining to subjects of general interest.

SUGGESTED READINGS

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PART TWO

CHAPTER XI

SILENT READING IN GRADES I AND II

The primary teacher's duty. The effective teaching of silent reading to first-grade pupils taxes the ingenuity of the best teachers. On the first day the little folks come to school eager to learn, but with no knowledge of the symbols which are so full of meaning to their older brothers and sisters. It is the primary teacher's duty and privilege to aid these children in their earliest attempts to solve the mysteries of reading.

Oral or silent reading in grade I. Regardless of the method used to teach beginning reading, silent reading should have a place beside oral reading. Authorities do not agree as to the relative emphasis which should be placed on oral and silent reading in the work of the beginning grades. Advocates of oral reading claim that it is natural for pupils in these grades to give oral expression to the symbols of reading, and that only in this way can pupils be taught to read. Others contend that overemphasis of oral reading in beginning grades largely accounts for the slow reading rate of many pupils in the more advanced grades. It is believed that the inherited tendency to inner speech and lip-movement is also accentuated by much oral read-

ing. Many teachers would practically eliminate oral reading in lower grades, except for reading poetry or stories to a class audience. We believe there is a legitimate place for both kinds of reading even in the first grade. Pupils should read silently more than they read aloud, even from the begining of their school work.

Material for use in silent reading. The progressive teacher is not content to have her pupils use only one primer or reader. She may adopt one as the basis for her classwork in reading, and undoubtedly should do so, but at least three or four other books should be read. She should stress blackboard work, especially during the early weeks of the first year.

The content of the most widely used primers, first readers, and second readers is rich in stories and nursery rhymes. Although these are excellent for reading purposes, they should be supplemented by material selected from the library and by blackboard lessons based upon classroom projects and excursions.

Pupils should be encouraged to read widely both in and out of school. It is a proven maxim that "we learn to read by reading." This is emphasized by the following statements which recently appeared in the *Twentieth Yearbook of the National Society for the Study of Education:*

Schools in which a large number of books are read in primary grades, as a rule produce strong readers. In the St. Louis survey a large proportion of the pupils were found to be reading many books silently during

the second and third grades. In some classes the children read as many as one book a day. The tests showed that these children were markedly superior to those who did not have such opportunity. The extensive reader acquires a wide field of experience, secures much practice in silent reading for the thought, the thread of the story, or the points of interest. He becomes practiced in phrasing. His vocabulary is increased through the acquisition of words whose meaning is gathered from the context.

Subject-matter for beginners. Unfortunately, the old-fashioned method of teaching beginning reading still prevails in many schools. Teachers select primers whose content has no intrinsic value as literature or story material, books which are without interest for the child. Their sole merit lies in the ingenious repetition of certain words merely for the sake of the repetition. From the beginning, the use of such books requires one to emphasize the recognition of words, with the result that children form the habit of reading this meaningless material hesitatingly, one word at a time, as shown by the following sentences.

"See"—"my"—"doll."
"See"—"my"—"little"—"doll."
"See"—"my"—"pretty"—"doll."

Such work causes the child to change his attitude towards reading. He loses his eager desire to know what is in books because the first ones are uninteresting, and he comes to look upon reading as a task instead of a means of obtaining delightful experiences. This is

not alone wrong, it is deplorable. At the very beginning of their school work children should get the idea that reading consists of getting the meaning from the printed page. That idea should be constantly reinforced by the use of meaningful material which is within the range of their interests and understanding.

Material of the proper kind is to be found in many beautifully illustrated primers and first readers whose subject-matter has always fascinated children. The vocabularies of those readers have been simplified, but content has not been sacrificed to simplicity. Repetition appears in them not as a mechanical drill device, but as an integral part of the story. Such reading books, supplemented by blackboard lessons based on classroom activities, make the teaching of reading a joy to both teacher and pupils.

Methods for use with beginners. Even when using the proper kind of subject-matter the teaching of reading may be ineffective because of faulty presentation. Teachers should avoid using methods which tend to develop habits that will handicap pupils in their subsequent work. The basic primer which contains trite, uninteresting subject-matter too often leads teachers to overemphasize the mechanics of reading. Reading lessons become word and phonic drills, and pupils read in a parrotlike fashion. Word and phrase drills do have their proper place in a method of primary reading instruction, but that place is after the reading of the story not before it. Then pupils realize the need

of knowing the meaning of particular word groups; then the isolated phrases have content meaning.

There are several good methods of teaching reading to beginners. These differ in the content on which they are based rather than in procedure, because all emphasize thought-getting. It is unlikely that any one method is best for all teachers. Usually, the better plan is to use one method as a basis for the beginning work and to supplement it with others. Three popular methods used extensively and successfully are here described and appraised.

The action method. Briefly stated, this method is based upon the use of words which express action. Teachers who use it usually have the pupils begin reading in a primer during the sixth week of school. The choice of words that form the content of the early lessons is to some extent governed by the vocabulary of the first primer lessons.

During the first few days of school the children's attention is focused on several simple action words such as "run," "jump," "hop," "skip," etc. The teacher begins by printing one of those words — "hop" — on the blackboard, and telling the pupils that they are to observe what she is going to do, because she will do what the word says. As soon as the pupils discover what the teacher does, they tell her what word she has written. Following that, several children point to the word and do what it says. As the lessons progress, all old words are constantly reviewed.

As soon as pupils are able to recognize several words, the teacher prints short sentences either on the blackboard or on strips of cardboard. The children are then asked to obey the commands stated in those sentences. Sentences such as "Run to me," "Hop to your seat," "Skip to me," can be introduced after two or three days' work.

Games may be made a part of the review work. One child, playing "teacher," should be allowed to point to words and sentences, then to call on other pupils to respond by performing the action indicated by the designated word or phrase. The printed directions may be shown either on the blackboard or on the cardboard strips.

Appraisal of the action method. The action method is valuable for teaching beginning reading, because children like to do things and consequently preserve a lively interest in this work, which is little else than a sort of game. This method minimizes oral reading, and furnishes the teacher with a simple but reliable measure of apprehension and comprehension.

Two outstanding defects of the action method render it unsatisfactory if it is used exclusively. It promotes children's tendency to see separate words instead of word groups. The word, instead of the thought, becomes the unit. This word-reading produces readers who are slow in rate and weak in ability to comprehend. A second defect of the action method is that teachers who use it are likely to prepare exercises which include

subject-matter of but little interest to pupils, and words that are not in their vocabularies.

The project method. Many teachers believe that they obtain the best results in beginning reading when they base the lessons on schoolrom activities or projects. When the teacher uses this method she does not have the pupils begin reading on the first day of school but postpones it for several days. During that time the teacher tells stories which she helps the children to dramatize in a small way, or she discusses some topic of interest to the class. Sometimes the whole class undertakes the execution of a project such as building a playhouse or dressing a doll. Children are encouraged to bring their toys and pets to school. Much free language work then centers around these activities and objects. The teacher then selects some subject of general interest to the class, which is related to the classroom activities. In her own informal talks about the subject selected she uses words and groups of words that are to appear in the first reading lessons.

A lesson of this type reported[1] by H. A. Brown of the Oshkosh State Normal School was based on the topic "Rabbits." For several days the interest of the class had been centered on some rabbits which a pupil had brought to school. One morning when the children reached the classroom, they saw on the blackboard pictures of a mother rabbit and her young one. These sentences appeared beneath the respective pictures.

[1]Brown, H. A. "Formulation of method in reading." *Journal of Educational Research,* Vol. 2, (June) 1920.

Here is a big mother rabbit.
This is a little baby rabbit.

As the pupils had previously used these sentences in the informal discussion of the words, the teacher now directed attention to the printed forms, the sentences were used again in various ways, and later various pupils read them.

On the second day the two sentences were read many times, and a third, familiar to the class from oral drill, was added. This plan was continued for several days, the old sentences being constantly reviewed in connection with the new until a complete story was built up. The pupils soon had a vocabulary which enabled the teacher to conduct new lessons by using familiar words. The sentence was always the unit; children were never allowed to read word by word.

A classroom project.[1] A lesson of this same type, presented to a class that had been reading a week or so, was based on the topic "Goldfish." As the pupils had been talking about the goldfish they had at home, the teacher suggested getting some for the schoolroom. That suggestion immediately aroused intense interest.

In response to the teacher's questioning, the children suggested the need of water, shells, and weeds, in addition to the goldfish and bowl. These words, printed on the blackboard when first mentioned, were also printed on slips of paper which the pupils used as

[1]Gray, W. S. "Reading in the elementary schools of Indianapolis: Part II." *Elementary School Journal.* Vol. 19, (March) 1919.

labels for the objects when the latter were obtained. Following that, the teacher told the class that they were ready "to put the various articles together." The sentences below were written on the blackboard, and the child who first read each was assigned to carry out the direction stated.

Get the bowl.
Put water in the bowl.
Put shells in the water.
Put weeds in the bowl.
Put fish in the water.

During the language period which followed this lesson, the teacher asked the pupils to relate the experiences of the reading recitation, and as they did so the following sentences, given by the pupils, were written on the blackboard. Later the story was hectographed and handed to the pupils, who then read and discussed it.

Goldfish

We have four goldfish.
We put them in a dish.
We put water in the dish.
We put shells in the water.
We put weeds in the water.
Fish like to eat weeds.
We named the fish.
The father fish is Dick.
The mother fish is Lassie.
One little fish is Weewee.
The other little fish is Weenee.

Appraisal of the project method. Although the

project method has much to commend it, teachers who have an inadequate supply of primers or whose primer contains only meaningless, uninteresting subject-matter should not attempt to use it, because every project-method lesson should be supplemented by lessons that appear in the reading text. An exclusive use of the project method makes much extra work for the teacher, because the lessons must be very carefully prepared in order to be at all worth-while to the pupils. An inadequate preparation of project-method lesson material is worse than the hackneyed subject-matter of the unsatisfactory primers. The preparation of these lessons requires much time, more than is usually available to teachers who have several grades in one room. However, teachers who have opportunity to prepare a background for this sort of lesson by presenting the preliminary work, will find that this method of teaching beginning reading gives large returns for the effort expended. Directing the children's interest to interesting subject-matter encourages thoughtful, intelligent reading, and quite properly makes the thought unit the center around which the lesson turns.

The story method. If the teacher expects to use this method to teach beginning reading, her pupils must have a primer that contains subject-matter of vital interest. Primers of that type are usually based on nursery rhymes or folk tales such as "The Little Red Hen," "Three Billy Goats Gruff," or "The Gingerbread Boy." Some teachers have their pupils use such prim-

ers for the first recitation. Others develop the rhymes and stories by means of blackboard lessons during the first few weeks, then have the children read from the books. If a good primer of this type is used, there is no reason why the children may not read the book from the beginning.

The lessons described in the following paragraphs show how the story method is used. The first, based on nursery rhymes, was preceded by two weeks of pre-primer work. The second, based on a folk tale, was read directly from the primer.

Lessons based on nursery rhymes. The rhymes used for this lesson introduced Bo-Peep, Little Miss Muffet, Jack Horner, and Humpty Dumpty. On the first day of school the children enjoyed themselves looking at several illustrated editions of Mother Goose rhymes. They commented on the illustrations, identified some of the characters, and recited such rhymes as they knew. The teacher called attention to the picture of Little Bo-Peep, talked about her to the class, had the pupils discuss her, and then had several children recite the rhyme. A number of children who knew the song sang it to the others, and during the period devoted to art instruction the class drew pictures of Little Bo-Peep.

The following morning all the children sang the song "Little Bo-Peep." Then the teacher said, "How would you like to read the rhyme to me? Let us print it on the blackboard where we all can see it. Tell me what

to print first." Some child suggested, "Little Bo-Peep has lost her sheep." That was then printed as one line, followed by the three remaining lines, printed as the children dictated. The rhyme was then read one line at a time, the teacher holding a strip of cardboard under each line as the pupils recited. Several children then recited the rhyme line by line, as the teacher moved the marker. Following that, the teacher asked the class to read the lines she indicated. During that exercise she did not follow the regular order of lines.

For the afternoon lesson the teacher again printed the rhyme on the blackboard. She then displayed strips of cardboard on which she had printed phrases such as *Little Bo-Peep, don't know where, has lost her sheep,* etc., and asked pupils to place the phrase cards under the same phrases written on the blackboard. Pupils had some difficulty to do this. They were familiar with the verses because of their place in the rhyme, and not because they recognized the phrases as such. During this work some pupils volunteered to help others who could not readily locate the phrases.

The teacher next showed the children a printed chart which bore the rhyme. After the pupils had compared this with the rhyme printed on the blackboard, in order to see if the two were alike, the teacher cut each line of the rhyme from the chart and then had the children place the line in the proper order on an improvised rack. While doing this work the children were guided by the rhyme printed on the blackboard.

The following day the teacher again printed the rhyme on the blackboard as the children recited it, and then had them arrange the strips on the rack as before. This was followed by a short phrase drill. The children then closed their eyes while the teacher removed one line from the rack. She afterwards asked the pupils to tell which line had been taken away. They did this by comparing the rhyme on the rack with the one on the blackboard. After this exercise the pupils were asked to use their phrase cards for matching certain phrases on the cards which were placed on the rack.

For the next lesson the teacher drew a blackboard picture of Little Bo-Peep and her sheep, and wrote the following sentences beneath it.

This is Little Bo-Peep.
She lost her sheep.
Her sheep came home.

The children were able to recognize some of the familiar phrases immediately. By means of drill the teacher soon acquainted them with all the words and phrases in these sentences.

In a similar manner the teacher presented and developed the three nursery rhymes, "Little Miss Muffet," "Jack Horner," and "Humpty Dumpty." The old rhyme was always reviewed in connection with the new by means of such exercises as these.

Little Bo-Peep lost her sheep.
She went to Little Miss Muffet.
Little Miss Muffet was sitting on a tuffet.

She was eating curds and whey.
She said, "Leave them alone and they'll come home."

The teacher then showed sentences like the following, printed on cardboard strips.

Show me the black spider.
Show me Little Bo-Peep and her sheep.

She then displayed pictures of the incidents mentioned in the rhymes, and upon showing one of the cardboard strips containing a command, she asked various children to do what the sentence directed.

Rapid drill on the words that frequently occurred was given at separate periods. The teacher pointed to a word on the chart or blackboard, then asked the class to indicate some other word that resembled it. Much drill was devoted to training in the recognition of phrases.

Towards the close of the second week the teacher introduced short silent-reading exercises consisting of printed questions based on the rhymes. Questions similar to the following were readily answered by the pupils.

Who lost her sheep?
Did Bo-Peep go to Little Miss Muffet?
Who said, "Please help me find my sheep?"

At the beginning of the third week the children began reading from their primers. They first spent some time looking through their books, examining the illustrations, and talking about the stories. They were able to identify many of the rhymes by means of the illustrations. When the pupils had looked through the primer they turned

to the first story. Some wanted to read it at once, but the teacher suggested that they first read the selection from the pictures to make sure that it was about the people of whom they had been reading in the blackboard lessons. That finished, the pupils read the story from the book. All read a sentence silently and then some pupil was selected to tell the class what the line said. If a sentence consisted of two lines, the teacher explained that the two were to be read together. Thus the entire story was read.

As the second primer story also consisted of a nursery rhyme, it was handled in the same way. Drill on difficult words and phrases was conducted at a separate period after reading the story. When pupils failed to recognize a phrase, the teacher helped by asking some question which indicated the setting of the phrase in the story. By substituting the children's names for those of the story characters, as the following sentences show, the pupils received practice in recognizing phrases in new settings.

Let us play we are Mother Goose children.
Jack and Billy sat on a wall.
Mary sat on a tuffet in the corner.
Phillip blew his horn.
Jack, Billy, and Mary were frightened.
Mary ran away.
Billy had a great fall.
He bumped his head.
He told Jack he broke his crown.

Appraisal of the nursery-rhyme method. This method of teaching beginning reading by basing the first reading lessons on nursery rhymes has proved very satisfactory to many teachers. The familiar, meaningful content fascinates pupils. By placing the emphasis on thought-getting the reading does not degenerate into mere word calling.

The main objection to the method is that its use early introduces into the child's vocabulary such unusual expressions as "sat on a tuffet," "broke his crown," etc. However, as those few unfamiliar phrases add to the jingle of the rhyme, that difficulty has aparently been overestimated. When using nursery rhymes, teachers must at all times make sure that pupils know the same version before they begin to read. Unless they have attended kindergarten such is not likely to be the case, because versions of the nursery ryhmes taught in different homes vary considerably.

Lessons based on folk tales. The treatment of these lessons resembles that of those based on the nursery rhymes, the need of pre-primer work depending on the simplicity of the primer in hand. If pre-primer work is used, the lessons should be based on the first few stories of the chosen primer and should introduce the important words and phrases of the book. In any case, however, blackboard lessons should precede and supplement reading from the books.

In presenting the lessons described here the primer was used from the first, although blackboard or chart

would have been equally satisfactory. The primer was used because each child had a book of his own and was anxious to use it, the vocabulary of the textbook was simple, and the illustrations were such that children could almost obtain the content of the story from them alone.

At the beginning of the first lesson the teacher gathered the class about her, distributed the books, and told the pupils to examine them. Each did so, remarked about the illustrations, and suggested stories that he would like to read. Pupils identified many stories by means of the illustrations. When the class had spent some time looking at the books, the teacher told the story of "The Little Red Hen,"[1] using the exact words of the book in so far as possible. When she finished, the pupils commented at length on the characters and incidents described.

The teacher then asked the pupils to "read" the story from the pictures. During that exercise she so worded her questions that the children were compelled to answer by using the words and phrases of the book, with which the teacher's oral rendition had acquainted them. For example, the teacher asked: "What does the first picture tell about?" "What did the little red hen find?" "What was the little red hen going to do with the seed?" "What did she say?" "What did the pig say?" "What did the cat say?" etc. The chil-

[1]This story appears in the Primer of the Free and Treadwell *Reading-Literature Series* published by Row, Peterson and Company, Chicago.

dren's answers, in complete sentences, were as follows: "The first picture tells us about the little red hen." "The little red hen found a seed." "The little red hen was going to plant the seed." "She said, 'Who will plant the seed?'" "The pig said, 'Not I.'" "The cat said, 'Not I,'" etc.

On the following day the teacher explained that the pupils were to read the story of "The Little Red Hen" again, but in a different way, not altogether from the pictures. She again told the story, and as she used each phrase she displayed a card on which it appeared. She taught the phrases, "Who will plant the seed?", "Not I," "I will then," "and she did," in this way. During the next few minutes the pupils identified the phrases by comparing the words of their books with the phrases printed on the cards, the teacher giving needed assistance. The drill was concluded when the pupils showed signs of fatigue. Whenever a child located a phrase which he could not read, the teacher asked some question about the content so as to help him. The brighter children readily recognized the phrases of the first lesson which occur throughout the story.

On the afternoon following this lesson the children actually read the text of the story. At that time the teacher distributed markers and explained their use, telling the children to place the marker under each line as it was read.[1] Whenever necessary the teacher

[1]Many teachers find that children who use a marker during the beginning work are less likely to form the pernicious habit of following the lines with the finger.

told the class to drop the marker two lines instead of one. In reading, the teacher designated the line, asked the class to read it silently, then asked some child to read it aloud. If the pupil had difficulty in reading a line, the teacher helped him by means of a question that gave the phrase its setting. For example, when the class could not read the line, "The little red hen said, 'Who will plant the seed?'," the teacher explained that the line told what the little red hen said when she found the seed. She also displayed a phrase card bearing the expression, "The pig said, 'Not I.'" Whenever a pupil interpreted the content correctly but failed to use the words of the book as he did so, the teacher explained that the sentence in question meant what the child said, but that he had used the wrong words. For example, one pupil said, "The pig said, 'I won't.'" The teacher then asked the other members of the class to tell the pig's exact words.

Each exercise of the type just described was followed by a word and phrase drill during the next period. During such drills the children were allowed to help each other. Similar phrase drills were used for review exercises.

During such lesson presentations as have been described the teacher must be alert every minute. She must help the children to adjust their markers, she must ask questions that will bring out the content of each sentence, and she must see that all take an active part in the recitation. Each story must be carefully

developed according to the following steps, whose order must not be modified if the teacher expects to obtain the best results.

1. Tell the story in an interesting manner, being careful to preserve the proper sequence of incidents and to use the important words and phrases of the book as much as possible.
2. Have the pupils "read" the story from the pictures. Use skillful questioning that will encourage them to reproduce the exact words and phrases of the text.
3. Re-tell the story to the class, making use of word cards and phrase cards.
4. Have the children locate certain phrases, compare the phrases on the cards with those in the book, and read the sentences of the book which contain the phrases being studied.
5. Have the pupils read the story from the book, sentence by sentence, at first silently, then orally.
6. Give blackboard and flash-card drill on words, phrases, and sentences which are to be fixed in the minds of the pupils.
7. Conclude the study of a story by having the children dramatize it for presentation before some other group.

Phonics in beginning reading. The exact relation of phonic instruction to the successful teaching of begin-

ning reading has not yet been determined scientifically, and there is still a lack of data on the subject.

Currier and Duguid report[1] an experiment conducted in the first and second grades. The pupils of each grade were classified into two groups, one being taught by means of phonic drill, the other by means of the sense-content method, supplemented by drill with word and phrase cards. At the end of the year those children who had received instruction in phonics pronounced words accurately, but could with difficulty reproduce what they read. Concentration on the sounds of letters had diverted their attention from the sense of the material to mere word pronunciation. The pupils who had received no phonic training were less accurate in pronunciation, but they could read more rapidly and fluently and could more readily reproduce what they read. The ability of the two groups to attack new words was approximately equal. The authors state that "foreign children, those having impediments of speech, and those who had previously formed bad habits of pronunciation were greatly benefited by the phonic drills."

Appraisal of the phonic method. Although the results of this experiment are not sufficiently extensive to serve as the basis for final conclusions, nevertheless they support the opinions formed by many who have made a study of primary-reading methods. These contend that an overemphasis of phonics is detrimental to

[1]Currier, Lillian B., and Duguid, Olive C. "Phonics or no phonics?" *Elementary School Journal*, Vol. 17, (December) 1916.

the formation of good reading habits, and that beginning reading can be taught successfully by using little phonic drill, if any. So far as pronunciation is concerned, phonics gives the pupil a method of attacking new words, and tends to make him an independent reader very early in his school life. But it is likely that other less desirable results which are not so readily recognized come from the early introduction of phonics.

Phonic drill centers the child's attention on single letters or on small groups of letters. This prevents the development of the wide eye-span necessary to effective silent reading. Phonics also divert the child's attention from the meaning of a story to the mechanics of reading, as is shown when he stops short in his reading of a selection to "sound" some unfamiliar word. That practice causes him to lose the thread of the story; his so-called reading is mere word-calling.

When should phonics be begun? There is little agreement among teachers as to the time when phonic drill should be introduced, or the emphasis it should receive. Miss Watkins, who begins phonic instruction during the first few weeks of school, says[1] that after the children are classified and arranged in their respective groups the daily work in phonics should begin. Miss Hardy, teacher in the elementary school of the University of Chicago, begins phonic work during the sixth week of school.[2] Brown seriously questions the

[1]Watkins, Emma. *How to Teach Silent Reading to Beginners.* J. B. Lippincott Company, Philadelphia, 1922.
[2]Parker, Samuel Chester. "How to teach beginning reading: Part III." *Elementary School Journal,* Vol. 22, (November) 1921.

use of phonic drill and word analysis during the early stages of reading. He says:[1]

Certain considerations must be taken into account in connection with the problems of phonetic drill. What reading habits are most desirable? What procedure in teaching is conducive to their development? These are questions which must receive serious consideration. Speed is a highly desirable factor in reading ability, merely as a timesaver if for no other reason. All habits which lead to slow and ponderous reading must be avoided. Speed in reading depends in part upon the size of the units of recognition, i. e., the amount which can be seen by the reader during eye-pauses, and in part upon the duration of eye-pauses. The individual who sees only a small portion of the line during an eye-pause must make many fixations. The longer the eye-pauses, the slower will be the reading, other things being equal. Will not a habit of attention to textual details inevitably result in slowness in reading? Will not a habit of recognition through dominant characteristics of words and phrases, with their minute particulars marginal in attention, become a distinct aid in interpreting thought? Is not the inevitable result of two or three years of persistent drill on the isolated elements of words bound to be a predominant habit of attention to the minute particulars of words? Can the eye be trained to take in large units by practice on small ones? Will not prolonged attention to word forms effectively prevent the development of a habit of thinking meanings as one reads?

In view of the facts at hand, it seems to me to be a radically wrong procedure to introduce such a large amount of abstract phonetic drill in the earliest stages of reading as is often found. It seems to me to be a

[1]Brown, H. A. "Formulation of method in reading." *Journal of Educational Research,* Vol. 2, (June) 1920.

very obvious inference that the predominant emphasis in method at the beginning must be upon the instantaneous recognition of words and word groups, the mental process being concerned with meanings rather than with word forms.

The children of the third grade in the training department of the State Normal School at Oshkosh spent the first two years in extensive reading of simple stories for pure enjoyment, with their attention entirely on the content. During the reading period all words not instantly recognized were told immediately. Word development was taken up in separate periods, the words being incorporated in phrases for drill, and no attention being called to the elements of words. Approximately fifty minutes per day were spent on all phases of reading, including silent reading, word development and study, and oral reading. Silent reading was begun early in the first year. Before the end of the second year the children began to pronounce new words without help, applying independently the general knowledge of phonic laws acquired unconsciously through much reading.

Beginning with the third year, the children were encouraged to organize the phonic facts so gained, and the four or five most common principles of phonics were taught. A short period at the end of the day was devoted to "pronouncing long words," as the children called it. This period became so popular that only with difficulty were the children persuaded to omit it on special occasions. Recently they were pronouncing with ease and enjoyment such words as hydrocarbon, hydrometer, tuberculosis, capitulate, centigrade, epidote, actuate, and many others of equal difficulty, without the aid of diacritical marks or context.

These children have developed insatiable appetites for reading, and they read intelligently and accurately with good expression and excellent speed. Of the two daily

reading lessons in the third grade, one is devoted to oral and the other to silent reading. The children are capable of reading any material suited to their age in content, and they read great numbers of books during spare periods and out of school hours.

Deferred phonic training. Although many teachers believe that the first week of school is too early for beginning instruction in phonics, they think that pupils need phonic drill before the beginning of the third grade, and that they can use phonics to advantage before that time. Such teachers usually introduce phonic drill toward the close of the first school year, about two months or six weeks before the close of the final semester. By that time pupils have usually read several primers and first readers. The emphasis on content has caused them to form the habit of reading for meaning and recognizing new words by their setting in the context. Although special training in word analysis is not given by these teachers, they insist on clear enunciation during music exercises and during the recitation of poems. Such work is good ear training. Many bright children seem to devise a system of attacking new words. For the benefit of the majority of the class, however, certain periods should be devoted to special drill at this time. The introduction of phonic instruction toward the latter part of the first school year renders less likely the development of a habit of word-calling. Children at that time recognize the value of phonics as a tool which will help them to read. The ability

they have acquired during their reading for content enables them to realize the need of some sort of assistance.

Importance of practice in reading. Children learn to read well by reading much. Practice makes perfect. Wide reading brings the child into contact with new ideas, new phrases, and new words, and enables him to review many old words and expressions. It is necessary for pupils in the primary grades to have access to much interesting reading material. A minimum of three primers and three first readers should be read in the first grade. In schools where there are well-equipped libraries many more are often read. The children should be given an opportunity to do much controlled silent reading and much supplementary reading. As we have already suggested, a supply of supplementary reading books may be obtained by having the pupils bring their story-books to the class to exchange with each other. These, and any other supplementary reading material, should be kept on a table or shelf where they will be accessible to all. Pupils may be permitted to read in those books after they have finished their assignments. Every effort should be made, however, to obtain a supply of books for the school library. A list of books that have proven highly satisfactory for use in primary grades is given in the Appendix (pages 357-381).

Controlled silent reading. Pupils of the first and second grades should read silently during the regular

class period in order to have the pleasure that comes from reading good stories. Many of the better first and second readers present in simple and interesting style fairy tales, myths, and nursery rhymes that have long fascinated children. The teacher should let the pupils read such material and then have them discuss the stories when they have finished. That practice cultivates the children's desire to read worthy material.

An example of the interest that may be aroused by an exercise of this kind is shown by the experience of a class which was very anxious to read from a new set of readers that had arrived a few days previously. Upon examining the books the class decided they would like to read the story of "The Fisherman and His Wife." They judged from the illustrations that this would prove interesting. One child, who had read the story at home, assured the others that such was the case. The teacher mentioned that she too knew the story, and she told the pupils that she would be interested to learn whether or not they would feel sorry for the fisherman and his wife. Spurred on by these incentives, the children read the story with keen interest and discussed it thoroughly when they had finished. The teacher took little part in the discussion; doubtful points, or those on which pupils disagreed, were cleared up by reference to the book.

Arousing children's interest. The practice of arousing an interest in a lesson or task is commendable. Teachers often accomplish this by relating some inter-

esting story at the opening of a reading period, then asking the children to read the story from books with which she provides them. The children's interest in the story induces thoughtful, purposeful reading; the influence of the clock provides for a speedy rate. Such lessons are usually concluded by asking a pupil to tell the story, or by using it as a topic for discussion during the English lesson. The latter plan is advisable as a test of comprehension. A large number of supplementary readers is a valuable asset to any teacher who wants to make the most of children's interest in good reading material.

SUMMARY

1. Silent reading should be stressed as much as oral reading, even in the first grade.
2. The teacher should encourage pupils in the primary grades to read extensively, because much reading tends to make good readers.
3. The reading material used should stimulate and foster the children's desire to learn to read.
4. Pre-primer lessons should be based only on such material as children will want to read outside of school.
5. In the first and second grades, phonic and word drills are absolutely necessary. They must always be given at a period separate from the reading recitation.
6. The transition from the blackboard reading work to reading directly from the books is more readily made if the former is based on the first primer lessons.
7. If first and second-grade pupils are to develop good reading habits, the teacher must emphasize controlled silent reading, supplementary reading, and silent-reading drill.
8. It is essential that pupils in the primary grades do much reading for pleasure.

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CHAPTER XII

SUPPLEMENTARY EXERCISES FOR GRADES I AND II

The need of word and phrase drills. It is essential that pupils in beginning reading classes frequently be given effective word and phrase drills. These help children learn to read by training them to recognize words and phrases quickly, an ability upon which progress in reading largely depends, especially when little phonic instruction is given. Even though the begining reading material does consist of simple, interesting subject-matter, word drill and supplementary blackboard lessons are necessary. This is particularly the case when pupils have only one or a few readers available.

A number of drill plans and devices suitable for use with beginners are presented on the following pages. The exercises are only suggestive; teachers should modify them whenever necessary, determining their changes by the principle that an exercise must always be adapted to the working vocabulary of the pupils.

How to conduct drills. As a rule, the teacher should classify each large class into three groups consisting respectively of the fast, medium-rate, and slow readers. Pupils do better work when they are included

in a group whose members are of nearly equal ability. There is but little incentive for a slow reader to try to read rapidly, if 80 per cent of the class excel him all the time. If such a pupil is placed in a group whose reading rate is nearly the same as his own, he realizes that he has a fighting chance to excel, and is consequently more likely to do his best work all the time.

When conducting drill exercises the words, phrases, and sentences should be presented so rapidly that the pupil can read them only as wholes. The length of the exposure should be less than the time which a fast reader requires to pronounce the words. Words and phrases can be presented by flashing cards on which they are printed, more satisfactorily than by writing them on the blackboard. If the teacher writes the words on the blackboard as she conducts the drill, pupils read them letter by letter as they are written, and that destroys any value that the drill, as such, might have. If the blackboard is used, it is well to write the list of words before the exercise begins, cover it with a map or window blind that rolls at the bottom, then expose the words and phrases one at a time.

The following drills may be used to advantage in the first and second grades. Each should contain those words and phrases that most frequently occur in the reading material which the class is studying. All work should be motivated by presenting it in the form of games, dramatizations, or competitive exercises. After

the pupils learn how to execute a number of these word and phrase drills and other exercises, the work may be truly pupil-motivated by allowing the children to choose the games they wish to play.

Exercise I: Action Words

All children like to play make-believe. The teacher can make use of this tendency by presenting the following game based on action words. The exercise can be varied by permitting the pupils who do the best work to play "teacher."

How many would like to play a game this morning? Would you like to play that we are deaf and dumb? Very well, that's what we shall do. Under the curtain is a long list of words, each of which tells us something to do. When I point to a word you must do what it tells you. Remember, though, we are unable to speak. Now let's see who can act first.

stand	rise	run	cry
smile	clap	hop	turn
bend	frown	laugh	reach
sit	jump	skip	walk

Exercise II: Drill on Prepositions

Children often fail to comprehend a sentence because they can not distinguish among such words as "behind," "beside," "beneath," etc. To remedy this defect the teacher may use the following exercise which is similar to the preceding one. She should select words and phrases which most frequently occur in future reading

exercises. Pupils enjoy making a "race" of this exercise.

Print each of the phrases given below (or others if more suitable) on a strip of cardboard. Write the phrase *"Place your hands"* on the blackboard. Instruct the children to read the blackboard phrase in connection with the cards as they are flashed, then follow the command stated.

under the desk	below the desk
on the desk	over the desk
above the desk	in front of the desk
beneath the desk	behind the desk
in the desk	upon the desk
beside the desk	underneath the desk

Exercise III: Labeling Objects and Pictures

The teacher should print on cards the names of objects and pictures of objects in the room. Flash the cards rapidly before the class. The pupil who can first name the word on a card should be allowed to take the card and use it to label the object or picture to which it refers. If the pupil who does the labeling makes an error, it should be corrected by another.

Children who first successfully complete the exercise should be given a supplementary set of cards to use for labeling other objects, while the remainder of the class continues the drill. This exercise may be made competitive by dividing the class into two groups, and allowing each group to keep score by reckoning the number of objects and pictures which its members label correctly.

Pictures for use in the exercise may be cut from

old books, magazines, newspapers, and catalogues, then mounted on sheets of heavy paper or cardboard.

Exercise IV: Opposites

The following exercise, based on the list of words given below (or on any others with which pupils are likely to be acquainted) serves not only as a drill on the recognition of words, but also as a language drill which emphasizes both speed and comprehension.

Prepare a number of flash cards about 6x9 inches in size. On one side of a card print a word, for example, "cold," and on the reverse print the opposite, in this case, "hot." Flash the cards before the class. The pupil who answers is to call the word that appears, then give the opposite. Whenever a child answers correctly, give him the card. The winner is the pupil who holds the most cards at the close of the exercise.

black	up	long	young	dirty
day	heavy	winter	dry	out
old	clean	white	down	short
wet	in	night	light	summer

Exercise V: Signs

The use of flash cards on which familiar and well-known signs are printed not only furnishes an excellent drill in the rapid recognition of words and comprehension of phrases, but is also of practical value in that it enables children better to look after their personal welfare. Children very much enjoy this sort of drill and eagerly report the new signs which they discover so that those too may be made a part of the exercise. The group of signs reproduced below is only sugges-

tive. The alert teacher will be able to supplement it with many others. Many signs and slogans may be found on posters issued in behalf of the Red Cross Society, health crusades, fire prevention, etc.

Stop! Look! Listen!
Railway Crossing. Look Out!
School House. Go Slow!
Danger! Sound Klaxon!
Slow down to 15 miles per hour.
Cars stop here.
Swat the fly!
Interurban Station.

EXERCISE VI: DRILL ON FAMILIAR COMBINATIONS

The reading material used in the first and second grades usually contains many words which frequently appear in the same combinations. Drill on those combinations is very profitable. The phrases should be printed on strips of cardboard which are flashed before the class. As already suggested, these flash cards must be exposed but a short time in order to give pupils practice in reading groups of words as units. The recognition of phrases at a glance tends to develop speed. The following list is only suggestive. In every case the teacher must base her list on the subject-matter of the textbook which the pupils have in hand.

by and by	long, long ago
one day	once there was
once upon a time	one morning
once there lived	the little girl
the old woman	the next day

on the way	thank you
good morning	one bright day
bad boy	one summer morning

EXERCISE VII: SPEED-DEVELOPMENT DRILL

The quick recognition of word groups which appear in the reading material regularly used by the pupils should be developed by means of phrase drills that tend to habituate the formation of a wide eye-span and to decrease regressive eye-movements. During such exercises the pupils should be required to work at top speed. Large classes may be divided into groups and those pitted against each other in order to introduce a spirit of competition. The class should be asked to refer to some familiar selection. The teacher then mentions groups of words such as "sing a song," "play with me," "to see grandma," "into a room," etc., and asks the pupils to "race" so that she may see who can be the first to find the phrase that has been read. Capable pupils should occasionally be allowed to take the teacher's place in this exercise.

EXERCISE VIII: ACTION-PHRASE DRILL

Children's ability to comprehend may be effectively tested by presenting exercises which require the pupils to carry out some command. This and the following exercise are suggestive of the sort of drills which teachers can prepare.

Write a "foundation sentence" on the blackboard. This should consist of some general direction. Flash

cards bearing words or groups of words which complete the sentence, having the pupils "race" to see who can answer first. The exercise may be varied by writing the "foundation sentence" and all the supplementary phrases on the blackboard, then uncovering the latter one at a time.

Place your hands...

...above your head
...on your hips
...on your shoulders
...behind your head
...in your pockets
...by your sides

Silent-Reading Exercises Based on Schoolroom Activities and Projects

Exercise IX: Action Sentences

An effective drill device, easily prepared, consists of sentence cards that give instructions for performing some schoolroom activity. The sentences may be either written on the blackboard or printed on strips of cardboard. Pupils should be instructed to carry out the command as soon as they read it. Such exercises as these train the children to grasp a group of words at a glance, and they enable the teacher to measure the comprehension ability of the pupils. The following sentences are typical of those that may be used for this sort of exercise.

Run to the window and look out.
Tell us what you see.
Place the clock on the window sill.

Turn the clock so we cannot see the face.
See who can find a long string.
Jack and Fred may play horse.
Bring me the book of Mother Goose rhymes.
Who can find "Little Boy Blue?"
Read it to us, Mary.

Exercise X: Games as Drills

The play instinct may be used as the basis for silent-reading drills. The following instructions, written on the blackboard or printed on cards which are flashed before the class, are good examples of a valuable combination of work and play. Children enjoy drills which are motivated like this one.

How many would like to play a new kind of basket ball?
George and Willie, you may place the chairs out of the way.
Jennie, bring the wastebasket.
Place it in the center of the cleared space.
Mary, bring the basket ball and place it in the basket.
The boys will play against the girls.
Form a big ring around the basket.
First a boy, then a girl, then a boy, and so on.
Throw the ball into the basket.
Make one try, then pass the ball to the next pupil.
Hand the ball to the pupil on your right.
We will mark the score on the blackboard.
You may keep score for the boys, Joseph.
You may keep score for the girls, Florence.
Is everybody ready?
Francis, you may begin.

Exercise XI: Dramatization

Stories such as "The Boy and the Goat," "Chicken Little," "Three Billy Goats Gruff,"[1] "The Three Bears," "The Fox and the Grapes," "The Pig Brother," "The Dog in the Manger," and "The Hare and the Tortoise" may be dramatized by first and second-grade pupils. They enjoy such work because it is a type of group activity which gives much pleasure, especially when one class presents its dramatization before another. Dramatization is effective drill because children must read carefully, organize, and make an effort to retain if they are to do the work successfully. The final result serves the teacher as a reliable measure of children's ability to comprehend.

In conducting a dramatization the teacher should first ask the pupils to read some familiar story silently. She should then permit one child to select others who will help him act the story in pantomime. After the presentation of the pantomime the pupils should be asked to guess what story was dramatized. Directions for presenting a selection may be printed on cards, or written on the blackboard and used as a flash-card drill in silent reading. The following questions based on the story of "The Boy and the Goat" are suggestive.

How many children do we need to play this story?
Whom shall we chose for the little boy?
Whom shall we choose for the goat?

[1]These three stories appear in the Primer of the Free and Treadwell *Reading-Literature Series* published by Row, Peterson and Company, Chicago.

Where did the goat run to?
What shall we call the woods?
Choose a rabbit, a squirrel, and a fox.
Who wants to be the little bee?
Where shall the home be?

Exercise XII: Excursions

Field excursions, visits to factories, dairies, pumping stations, blacksmith shops, fire departments, and similar places furnish excellent material upon which to base silent-reading lessons. One exercise may be devoted to planning the trip, another to relating what was learned during the visit. The following specimen lesson was planned for a second-grade class one spring day.

As the children were much interested in the change of nature which indicated the coming of spring, the teachers suggested that the class make a trip to the woods to look for signs of spring. The sentences given below were written on the blackboard, then exposed one at a time for a few seconds, to serve as a silent-reading drill.

Before the Trip

We shall go to the woods to look for signs of spring.
Shall we follow the road or the stream?
Do we need our caps and coats?
Let us go through the halls quietly.
Are we all ready?
Stand.
Jack, lead your group.
Mabel, lead your group.

After the Trip

Which group reached the woods first?
What did Olive see just as we started?
What was the bird doing?
Would you call that a sign of spring?
What did we notice when we reached the brook?
It has not rained this week. Where do you suppose the water came from?
What happened to David's toy boat?
Why did he not wade in to get it?
Who first found the pussy willows?
Where were they growing?
What did we do with them?
What other signs of spring did we see?

Exercise XIII: Missing Word Drills

Classroom work may be correlated with reading lessons in many ways, one being indicated by the exercise described below. Such drills may be used even in first-grade classes. They furnish an accurate measure of children's ability to comprehend.

Second-grade pupils who had been studying Indian life made an Indian camp which they equipped with as many objects as they could make. Cards similar to the following were then flashed before the class. The pupils answered by supplying the missing word.

Indians lived in ——— .
They made their homes of ——— .
They hunted with ——— .
The Indians made arrows of ——— .
The Indian hunters killed many ——— .

They used the meat for ——— .
The skins were used for ——— .

Exercise XIV: True-false Drill

Children's ability to comprehend may be quicky determined by flashing sentences, some of which are true, others false, and requiring them to give their answers to the statements. Such exercises should be based only on material which is of value and interest to the pupils. Lessons which deal with foods, clothing, the care of the teeth and eyes, saving money, and similar topics are not only of value for what they contain, but they furnish excellent reviews of work already done in nature study, hygiene, geography, and other subjects. Such exercises as those described below have an additional value in that they enable the teacher to determine whether the child's thinking about a subject is right or wrong. If wrong, the teacher has an opportunity to correct it.

The Morning Meal

We should eat pie for breakfast.
Porridge and milk is good for us.
We should always chew our food well.
We should drink at least two cups of coffee.
We should never eat oranges or other fruit.
Eggs make a very good breakfast dish.
Always eat breakfast quickly, then run to school.

Personal Hygiene

We should always sleep with windows tightly closed.
The living rooms should have plenty of sunshine.

We should clean our finger nails every morning.
It is good for us to have damp feet all day.
We should clean our teeth every morning.
We should not often take a bath.
We look better if our hair is not combed.
We should drink a glass of water before each meal.
We should all drink from the same cup at school.

Exercise XV: Current Topics

Valuable material on important topics of interest to primary-grade pupils may be found in pamphlets of various kinds. The questions given below, which formed one of a series of lessons on the house fly, were based on an article which the teacher adapted from the International Harvester Company's bulletin, "Trap the Fly." The lessons were presented at a time when all the pupils were much interested in devising methods of combating the fly.

The teacher printed a story entitled "Flies and Babies" on the blackboard, then asked the pupils to read it. Following that she flashed cards bearing questions which pupils were to answer if they could. The cards were exposed only a few seconds.

Flies and Babies

Do you know that flies make babies sick?
They often make the baby so sick that he dies.
The fly gets into all kinds of filth.
He eats all kinds of dirty things.
His legs and body are covered with hairs.
The dirt sticks to the hairs.
Then the fly goes into the house.

He gets into baby's milk.
He leaves disease germs there.
He walks on the nipple of baby's bottle.
He lights on baby's lips.
He crawls over baby's hands.
He leaves dirt every place he goes.
Often the dirt makes baby sick.
Let us swat the fly.

Questions

How do flies carry dirt and disease germs?
On what do flies live?
What does the fly leave on baby's bottle?
What would you do if you saw a fly in baby's milk?

Exercise XVI: Hygiene Lessons

The paragraph below was adapted for use in a class of second-grade pupils. It is suggestive of the kind of lesson that may be prepared on the following subjects: The Value of Screens, How to Make a Fly Trap, The Fly in Winter.

Flies

The fly is a very dangerous insect. It is born in garbage piles. It loves dirty places. You may see it getting its dinner from garbage pails and other dirty places. Its hairy legs and body become covered with dirt and filth. Then it flies to the house. It lights on our food, gets into the milk, walks over baby's face, or over the nipple of his bottle. The fly leaves filth wherever he goes. You all know that many babies die in hot weather. But do you know that it is often the dirty fly that makes them sick. More babies die in

places that have flies. Swat, trap, or poison every fly you see.

Questions

Where is the fly born?
Where does it like to eat?
How does it carry dirt and germs?
What does it do in the house?
Why are flies so dangerous?
How can we get rid of them?

Exercise XVII: Children's Diet

It is sometimes possible to use lessons of the type described in Exercises XVI and XVII without adapting the material. In such cases the pamphlet is handed to the children and they are instructed to read some part of it carefully. When they finish, they write answers to questions which the teacher has prepared and written on the blackboard. In using this sort of exercise, which requires written answers, it is well for the teacher so to frame the questions that they may be answered with but little writing.

The specimen lesson given below was based on the pamphlet, "Diet for the School Child," issued by the extension department of the State University of Iowa. It was prepared by Miss Ethel Hale for use in a second-grade class at the university elementary school.

Milk as Food

Milk is the best and most important food for growing children. No other food can take its place. Children over five years of age should have at least three

cups a day, and more when possible. Milk should not be given very cold. Warm milk is more easily digested. If children do not like milk alone, it may be given in the form of cocoa, soups, and custards. They often can learn to like milk. Where it is impossible to get fresh milk, evaporated milk may be used. If evaporated skimmed milk is given, give the child plenty of vegetables and some cream or butter. Tea and coffee should never be given to growing children.

Questions

What is the best food for children?
How much should be taken at each meal?
Which is better, cold or warm milk?
Do all children like milk?
How much coffee should children drink?

Exercise XVIII: Riddles

Riddles and rhymes strongly appeal to children, and may profitably be used as the basis for silent-reading exercises. The child's answer is an accurate measure of his ability to comprehend. In order to prevent the brighter pupils from spoiling these riddle lessons with their too rapid answers, it is well to ask the class to write the answer to a riddle, or to draw a picture of the object which it suggests. Riddles and rhymes like those below may be found in primers and magazines edited for the use of primary-grade teachers.

(1)

As round as an apple,
Far deeper than a cup,

And all the king's horses
Can't pull me up.
What am I? (*A well.*)

(2)

It is golden, it is bright
And we love its pretty light;
When it smiles down from on high,
How the ice and snow do fly!
What am I? (*The spring sun.*)

(3)

I play out in the woodland
All summer merrily.
I swing from swaying branches,
I leap from tree to tree.

But when in early autumn,
The nuts are ripe and brown,
I go to work in earnest,
As they come tumbling down.

I never think of playing,
But work so steadily
To hide my winter store away
In wall or hollow tree.
What am I? (*A squirrel.*)

SILENT-READING EXERCISES BASED ON SEAT WORK

Some valuable silent-reading exercises may be based on the children's seat work. This plan is especially advised if the teacher has several grades in a single room and is compelled to give each its share of atten-

tion, thus having but little time left for supervision of classes not reciting. The following exercises are suggestive of the sort of work that may be done in silent reading under these circumstances.

Exercise XIX: Nursery Rhymes

The children's comprehension of poems and nursery rhymes found in primers and first readers may be measured by having the class read the selection once rapidly, then graphically represent what was read. For example, first-grade pupils may be asked to read the following poem and then draw the picture which it calls to mind.

When I was down beside the sea,
A wooden spade they gave to me
To dig the sandy shore.
My holes were empty like a cup,
In every hole the sea came up
Till it could come no more.

This sort of exercise may be made somewhat more difficult by having the pupils read a poem, then use colored pencils to represent graphically a number of objects mentioned in it, according to instructions placed on the blackboard.

Humpty Dumpty sat on a wall.
Humpty Dumpty had a great fall.
Not all the king's horses,
Not all the king's men,
Could put Humpty Dumpty back again.

Directions

Draw a big egg.
Draw eyes, nose, and mouth on it.
Draw two legs on the egg and color them black.
Draw a hat on the top of the egg.
Color it blue.
Draw a wall for Humpty Dumpty to sit on.

The above exercise may be followed by others based on the same selection. For example, the teacher may write directions for drawing a picture of Humpty Dumpty as he fell from the wall.

EXERCISE XX: DRILL ON PHRASES AND SENTENCES

From discarded primers or books of equal difficulty cut phrases, clauses, and short sentences found in such stories as "The Three Bears," "Little Red Riding-hood," "Jack and the Bean Stalk," the Mother Goose rhymes, and others. Mount the passages on small squares of manila paper, classify as to difficulty, place from ten to twenty-five slips of equal difficulty in an envelope, and file the sets of envelopes in a box.

Let the pupils use this material when they have finished their regular work. They should work in pairs, one, playing "teacher," showing the cards to the other. Each group must begin with the package of simplest phrases, and the contents of each package must be thoroughly mastered before the next envelope is taken up. The cards are to be flashed for only a short time and each package completed must be constantly reviewed.

This exercise may be varied by placing all the words, phrases, and sentences of a single story in one envelope, then asking the pupils to place those together in such order as to reproduce the story. Stories used for this sort of exercise must, of course, be very short.

Exercise XXI: Pictures as Answers

The teacher may prepare a series of cards on which she writes or prints simple questions based on some story which children have read and with which they are thoroughly familiar, for example, the story of "Little Red Riding-hood." As a seat-work exercise, children are asked to prepare written answers to the questions, or to draw pictures that will answer them. The following questions are suggestive of the kind that may be used.

Where was Little Red Riding-hood going?
Whom did she meet?
Was the wolf her friend?
What did the wolf want?
Who first reached the grandmother's cottage?

Pupils will have no difficulty in answering such questions, as all needed words appear on the cards displayed before the class.

A similar exercise consists in placing the following rhyme on the blackboard and asking the children to draw and color the picture which the lines call to mind.

Robin, he,
On a tree,

Saw ripe cherries,
One, two, three.

The project work done by second-grade pupils may often be made the basis for interesting silent-reading exercises and effective comprehension drills. Pupils of a class that was studying Indian life were making miniature wigwams out of sticks and brown paper. By writing the following questions on the blackboard, and giving no further directions, the teacher conducted a profitable exercise in hand work and in silent reading at the same time.

Tie three sticks together.
Make them stand on your desk.
Take your brown paper. Cut it to make a covering for the wigwam.
Draw or paint some Indian pictures on the covering.
Fasten the covering around the sticks.
Be sure to leave a door.
Turn the flaps back.

Exercise XXII: Construction Work

Construction work in paper cutting and drawing may be successfully related to the work in silent reading as soon as the pupils pass the earlier stages in which they learn to use their tools. When the experimental work is completed and they begin to express their own ideas in their own way, they usually come to the teacher for ideas and suggestions that will help them to make their work look better. Such suggestions may be given as instructions written on the blackboard. The following

instructions were displayed before a first-grade class to guide them in making candy boxes for a school enterprise.

Fold the paper to make sixteen squares.
Make two cuts on each end, like this. (*The blackboard drawing showed the cuts.*)
Fold the ends in so as to make a box.
Paste the ends.
Make a cover in the same way.
Put the cover on the box.

A second-grade class that had read the story of "Little Black Sambo" followed the directions given below to cut a picture of Sambo from colored paper. Before the instructions for cutting were shown to the pupils, they answered the following questions which were written on the blackboard.

Who was Little Black Sambo?
What color was his coat?
What was the color of his trousers?
What did he have on his feet?
Did he wear a hat?
What did he carry in his hands?

After the pupils had answered those questions, each was given scissors and sheets of colored paper, and the following questions were displayed on the blackboard.

Cut out Little Black Sambo. Make him as tall as your paper will let you.
Cut out the red coat.
Cut out the blue trousers.
Paste the coat and trousers on him.

Cut out his purple shoes. Paste them on his feet.
Cut out the green umbrella. Make the handle long enough.
Paste it where you think it should go.

Exercise XXIII: A Bulletin Board

Much incidental work in silent reading may be done by using a bulletin board on which announcements of interest to the whole class may be pasted daily. The day of the week and the date should be conspicuously displayed at the top of the board. The following are typical of the kind of announcements that may be used.

Tomorrow is Fire Prevention Day. We are going to visit the fire hall.
Today is Betty's birthday.
We are going to have visitors today.
We pack our Red Cross Christmas boxes next Friday. Don't forget your gifts.
Thursday is Thanksgiving Day. We will have a holiday.

Results versus effort. The preparation of the exercises suggested in this chapter, and the arrangement and collection of suitable materials, make a considerable demand on the teacher's time. Such efforts are well repaid, however, by the superior quality of the results obtained.

SUMMARY

1. Practically all first and second-grade lessons in hygiene, home geography, morals, games, social activities, clothing, foods, nature study, language, field trips, and hand-

work projects may be used as a basis for silent-reading drills and exercises.

2. If materials chosen for this work are in written form, they should be used as the basis of silent-reading study lessons before the drill work is begun.
3. After pupils have read the material silently they should discuss it in class.
4. Silent-reading drills should be based on the materials read and on the class discussion that follows.
5. Directions for the execution of projects and seat-work activities may be made the basis of silent-reading lessons and drills.
6. The fact that silent reading is used for drills and review further insures comprehension and retention.

SUGGESTED READINGS

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CHAPTER XIII

SILENT READING IN GRADES III AND IV

Training pupils to read silently. Teachers who want to obtain the best results from their teaching of reading must determine what methods and devices will most economically train pupils to concentrate on what they read, and to read rapidly with a reasonable degree of comprehension. They must encourage pupils to read all their lessons according to the plan used during the reading recitation. They should use many reading periods for helping pupils discover the best way to develop good reading habits. They must realize that the greatest service they can render is so to teach reading that the skills and attitudes which pupils develop in the reading class will transfer to all their other work.

In so far as they can, teachers must inspire pupils to want to become rapid and accurate readers. They must help pupils by providing much interesting reading material suitable for each grade, and by using material found outside of textbooks as a basis for discussion during the reading recitation and the oral-English period.

Aside from this definite training in silent reading, there are other important factors which affect the establishment of economical study habits. The child's mental

endowment, health, experiences, and environment must not be ignored. Although a pupil's progress in reading depends largely upon his mental capacity and the effort that he puts forth, it may be greatly increased by training him in habits of concentration, organization, accuracy, and rapidity. Many teachers say that their pupils can not concentrate. Perhaps they hold that opinion because they have stressed neither the ideal nor the training necessary to enable children to do those things essential to concentration.

General principles to be observed. The general principles to be observed in teaching reading to pupils of the third and fourth grades are practically the same as those used in the two lower grades. The outstanding difference is that word drill and phonic drill may largely be dispensed with, and that greater emphasis must be placed upon the quantity and variety of material read. Progress in silent reading will be assured if the teacher establishes a correct attitude toward reading, if she carefully uses devices and drills to train pupils in effective methods of study, and if she requires much reading outside the regular class work.

The pupil's attitude toward reading is very important. If he thinks of the lesson as containing material with which he should become familiar, he will accomplish much more. Psychology has shown the influence of the will when doing a thing. If the pupil desires to become a proficient reader, the methods employed during the class period will be much more effective.

The teacher's problem is to make class training function as a general reading habit. She must provide pupils with much outside reading material and encourage and require them to use it. She must keep the ideals of speed and concentration constantly before the class, and she must help pupils acquire those abilities.

Types of reading ability. The teacher of silent reading usually finds three types of readers in each class, — rapid, medium-rate, and slow. By grouping the pupils on the basis of speed she can expedite her work and make it more effective. Whenever there is a wide difference in the abilities of pupils, the teacher should form at least two groups.

The difference in reading rate of members of the same class makes it difficult to provide exercises which are of benefit to all. Slow readers are likely not to try because they realize the futility of competing against more gifted classmates; rapid readers, not being compelled to work under pressure, tend to become lazy. Both groups are injured. To prevent this condition, and to attain maximum results from pupils of each group, the teacher must use plans specially designed to accomplish those ends. Such plans are suggested on the following pages.

Need for individual treatment. Teachers often find pupils whose difficulties need personal attention. Children who have much difficulty in learning to read are often advanced from grade to grade without having their needs carefully studied. If such pupils are discovered, the teacher should endeavor to determine the difficulty,

and having done so she should give the pupil such assistance as will enable him to work with the group. She should point out the handicaps entailed by bad reading habits, and she should suggest remedial measures.

If pupils who pronounce audibly or whisper when they read are allowed to persist in those habits, they will probably never become rapid readers because they read only one word at a time. The teacher can help such children overcome those habits by having them place the finger on the lips as a check, whenever they observe that they are moving the lips. Repeated suggestions will also help pupils to refrain from using the finger to indicate the words being read, another pernicious habit. The names of pupils who succeed in controlling such tendencies may be placed on honor rolls as an incentive to continued effort.

Types of silent-reading material. Pupils in third and fourth-grade silent-reading classes may use the subject-matter contained in the ordinary school readers, geographical primers, historical and biographical sketches, simple accounts of civic and industrial activities, material relating to class projects such as making a garden, sewing, etc., and such subject-matter as may be found in pamphlets dealing with "The Child's Food," "Fresh Air," "Penny Savings," and like topics. Lists of books and pamphlets suitable for this work may be found in the Appendix (pages 357-381).

How to use silent-reading material. The kinds of material listed above may be used either for purposes of

class reading and discussion, or as the basis of drill exercises. Not every reading period, however, should be devoted to strenuous, intensive speed and comprehension drills. Although such exercises are given prominence in the specimen lessons which follow, teachers should not conclude that that phase of instruction is most important. Such exercises have been suggested only because they are usually badly needed.

Class discussion of silent reading. Reading and discussing the good literature to be found in school readers and choice children's books is not beyond the ability of third and fourth-grade pupils. Such discussion is of marked social value. Reading such literature inspires children to be better and to do more, and gives them a better conception of their relationship to one another. In all such discussion, however, moralizing must be carefully avoided. Let the pupils themselves determine the motives of the characters and call attention to the consequences of various courses of action. Encourage pupils to compare and contrast the story's characters and episodes with others with which they are familiar. Encourage them to enliven the discussion with accounts of their own experiences, in so far as those bear upon the topic. The primary aim of all this work is to have pupils think, estimate, judge, and infer.

The type study of "Queen Mab" presented below gives an idea of the method that teachers may use to make a silent-reading assignment the basis for a class discussion. In this work the pupils should use about

half the recitation period for reading the selection silently, merely to experience the joy of reading. The remainder of the time may then be used for discussion. Pupils should be led to talk about the characters and leading episodes of the selection, to point out the climax of the story, and to select the most beautiful or dramatic parts. They should be asked to explain why they like the story, and to tell which part most appeals to them. Several children should orally read the paragraph that answers the questions being discussed. That sort of oral reading is pupil-motivated. It tends to be well done because pupils try to read so as to convince the class audience. During the last few minutes of the reading period teacher and pupils may select the main points of the lesson, then make an outline or summary of the whole. At times pupils should indicate the chief thought in the lesson and discuss it in its relation to all the other ideas.

Type Study: A Poem

Queen Mab[1]

A little fairy comes at night,
  Her eyes are blue, her hair is brown,
With silver spots upon her wings,
  And from the moon she flutters down.

She has a little silver wand,
  And when a good child goes to bed,

[1]From the *Story Hour Readers: Book Three* published by the American Book Company, Cincinnati.

She waves her hand from right to left,
And makes a circle round its head.

And then it dreams of pleasant things —
Of fountains filled with fairy fish,
And trees that bear delicious fruit,
And bow their branches at a wish.

Of arbors filled with dainty scents
From lovely flowers that never fade;
Bright flies that glitter in the sun,
And glowworms shining in the shade.

And talking birds with gifted tongues,
For singing songs and telling tales,
And pretty dwarfs to show the way
Through fairy hills and fairy dales.

But when a bad child goes to bed,
From left to right she weaves her rings,
And then it dreams all through the night
Of ugly, horrid things!

Then lions come with glaring eyes,
And tigers growl, a dreadful noise,
And ogres draw their cruel knives,
To shed the blood of girls and boys.

Then stormy waves rush on to drown,
Or raging flames come scorching round,
Fierce dragons hover in the air,
And serpents crawl along the ground.

Then wicked children wake and weep,
And wish the long black gloom away;

But good ones love the dark, and find
The night as pleasant as the day.

I. During the study period the children should read the entire poem. If they wish, they should read it more than once. Children are entitled to some of the satisfaction that comes from self-directed activity. They must have abundant opportunity to practice, if they are ever to learn to read on their own initiative or merely for pleasure and profit.

II. Write the following questions on the blackboard and ask the pupils to use the silent-reading work as a preparation for answering them.

1. What do you know about the fairy?
2. Just what does the fairy do when she comes to the bedside of a good child?
3. What good things does the child dream about?
4. How many stanzas tell of those good things?
5. How does the fairy wave her wand over a good child? How does she wave it over a bad one?
6. Tell, in order, all the things that a bad child dreams about. How many lines tell of the bad things?
7. What difference does this make to children when they are in the dark?
8. Into how many parts is this story divided?

III. Have a different pupil read each of the parts aloud.

Type Study: A Prose Selection

Narcissus[1]

(I)[2]

On day Narcissus had been hunting in the forest till he was tired and thirsty. He came to a fountain where the water was as clear as crystal. The rocks sheltered it from the sun, the grass grew fresh around it, and not a leaf fell to disturb the surface.

(II)

The handsome youth stooped to drink and saw his image in the water. He did not know it as himself, but thought it was some beautiful water-nymph who lived in the fountains. He gazed with pleasure at the bright eyes and curly locks, the rounded cheeks and parting lips. He forgot his hunt. He forgot everything. He could only gaze at his own image.

(III)

All day long he begged the beautiful creature to come out of the water. More than once he plunged into the fountain to meet it, but the moment he touched the water the image disappeared. Then he talked to it. "Beautiful nymph," he would say, "why do you shun me? You smile at me, and when I stretch forth my arm, you do the same. Will you not come to me?" The lips parted, but no sound came forth.

(IV)

Day after day, and night after night, he sat on the banks and gazed at the image. He saw the face in the water grow pale, and his own face grew white, and

[1]This selection appears in the Fourth Reader of the Free and Treadwell *Reading-Literature Series* published by Row, Peterson and Company, Chicago.

[2]These subdivisions, (I), (II), (III), and (IV), are merely for convenience in referring to the questions based on this selection. They do not, of course, appear in the textbook.

his yellow hair fell over his hollow cheeks. At last his breath floated away and there, instead of a beautiful nymph, stood a flower, gazing with bent head into the crystal fountain. In his memory the flower bears his name.

I. Let the pupils read this story for pleasure during a study period. Do not question them or give them any directions.

II. During the study period, or a continuation of it, pupils should prepare to answer the following questions:

1. How many parts does this story have?
2. What is told in the first part? (The answers of the pupils should include all the facts in proper sequence.)
3. Why does the story tell that the fountain was clear? sheltered from the sun? surrounded by grass? undisturbed?
4. What can you call this part of the story? (*The introduction.*)
5. Relate the second part of the story.
6. Had the youth ever used a mirror?
7. What expressions of the story help us to picture this boy?
8. What was the effect of his image on him?
9. Tell the third part of the story in detail.
10. Why did the image disappear when the boy touched the water?
11. How do you account for the boy's smile?
12. Explain: "The lips parted, but no sound came forth."
13. What can you call the fourth part of the story? (*The conclusion.*)

14. How do you account for the boy's seeing his image at night?
15. Why did the face in the water grow pale?
16. Explain: "his breath floated away;" "gazing with bent head."
17. Which part of the story do you consider most interesting? At what point do you become less interested?

III. At the conclusion of the work outlined above, the story should be read by four pupils, each of whom reads one of the parts. One pupil may then tell the entire story.

Study lessons in geography. History and geography assignments furnish a good opportunity for teaching pupils how to study effectively. The factual nature of the material makes it an easy matter to test children's comprehension of what they have read. That should, of course, be done.

Teachers too often make assignments merely by saying, "Read from page so and so to page this or that." The pupils do as they are directed, but when they come to class they either are unable to tell what they have read, or they cannot discriminate among the many facts that they have acquired. This is a wrong state of affairs which may be remedied even in the third grade. The teacher can teach pupils of that grade that studying is really a process of selecting and evaluating. Such instruction should be given by means of a proper assignment.

The following type study is based on a selection

entitled "Leather and Its Uses."[1] Preceding the silent reading of the lesson the teacher had the class discuss the topic. The children were asked to enumerate the articles made of leather which might be found in the schoolroom, for example, shoes, coats, pencil cases, chair seats, etc. They were asked to tell what they knew about leather, to name the different kinds, to tell where and how it is obtained, and how prepared for use. Following that, the teacher displayed a list of questions on the blackboard, explained that the answers to them might be found in the geography lesson, and asked the children to read the questions and then the geography aassignment. They were directed to answer as many questions as possible when they had finished their reading, and to refer to the textbook for the answers they could not remember.

TYPE STUDY: A GEOGRAPHY LESSON

Leather and Its Uses

The coats that are worn by cattle, sheep, and other animals are called skins. After these skins have been tanned, they are called leather.

Many articles of clothing are made of leather. Let us name some of them. Boots, shoes, coats, caps, aprons, belts, gloves, and mittens are the most important. Have you ever seen anyone wearing an apron of leather?

Besides those of sheep and cattle, the skins of goats, deer, horses, dogs, kangaroos, alligators, and of some other animals are made into leather. Calfskin makes

[1]This extract is taken from L. F. Chamberlain's *How We Are Clothed* (pp. 99-103), published by The Macmillan Company, New York City.

the best shoes for men and boys. Only the skin from the under side of an alligator's body can be used. Can you tell why?

A place where skins are tanned is called a tannery. An acid obtained from the bark of the oak, hemlock, and some other trees is much used in tanning. On this account tanneries are often found where these trees grow in abundance. There are other things also that are used in tanning.

Let us visit a tannery and see how the work is done. Here are great quantities of skins or hides. Some of them have come from the cities where large numbers of animals are killed for food. Can you name any of these cities? Some come from Mexico and some from the plains of South America.

The hides are placed in large vats partly filled with a liquid containing lime. This liquid loosens the hair, which is afterward scraped off with a blunt instrument. The lime is now washed off by throwing the hides into the water. Here is another man scraping the skins. He is removing bits of flesh that were left clinging to them.

You have often noticed the pores in the skin on the back of your hand. The perspiration comes through the pores. There are pores in the skins of the lower animals, too. In order to open the pores of the skins, so that the tannic acid may enter and tan them, the skins are soaked in a certain liquid.

If you have ever had a blister on your hand, you have noticed that the skin consists of two layers. The skin of the lower animals consists of two layers also. The inner layer, or derma, is made up partly of a jellylike substance. Tanning hardens this and makes the leather wear well. If it were not for the tanning, shoes made of leather would not be very valuable, for they would soon wear out. After the skins have been dried, they are pressed between great rollers

to make them smooth. A hundred years ago tanning hides required many months. Now it is done much more quickly.

Shoes and other things made of leather are of different colors. This is because the leather is colored. It is not dyed as cloth is, but the color is put on with a brush.

Kid gloves are made from the skins of young goats and lambs.

Questions

1. What is the difference between skins and leather?
2. Who wears a leather apron?
3. What is the best skin to use for boys' shoes?
4. Why are tanneries often found near oak or hemlock groves?
5. Why are the hides placed in lime?
6. What acid is used to tan leather?
7. What is the inner layer of skin like?
8. What does tanning do to it?
9. How is the leather colored?
10. How is cloth colored?
11. What is made from the skin of young lambs?

Another effective way to encourage discriminating reading is to allow pupils to read a selection in any way they wish, first informing them that they will be expected to answer a list of questions when they have finished. The questions used should be such as may be answered in few words. Pupils should write the answers as they are read, then exchange papers for correction. This is a rapid method of handling such work; so done, it may be finished in a few minutes.

After pupils have had considerable practice in reading for the purpose of finding answers to questions, they may be allowed to read a selection with a view to making their own list of questions. These questions should be freely criticised by the class, so that all may be assured that the main ideas have not been overlooked.

Continuous questioning. The continuous question method may be used to develop purposeful reading habits. Pupils should be instructed to open their books at a given page, but to do no reading until the teacher announces the signal. The latter should explain that she will ask a question about every thirty seconds, and that the pupils are to find the answers as they read. Pupils should read as rapidly as possible, keeping as far ahead of the teacher as they can. At the end of two minutes the teacher calls time, each child marks the last word he read, and the class discussion follows. The teacher's rate of questioning should correspond to the reading rate of the pupils. In such drill exercises, pupils of about the same reading ability should be grouped together.

Class-project lessons. Project work of almost any kind may be used as a basis for silent-reading work in the third and fourth grades. The teacher should carefully prepare her questions and directions so as to avoid any misunderstanding by the pupils. The questions should always be written on the blackboard before the class period begins. They may be covered if it is inadvisable for the pupils to see them in advance.

Charting results of comprehension tests. Children take great interest in making charts that show the results of comprehension tests, whether such charts indicate the scores of an entire class or of a single pupil. Individual charts showing weekly progress are very stimulating.

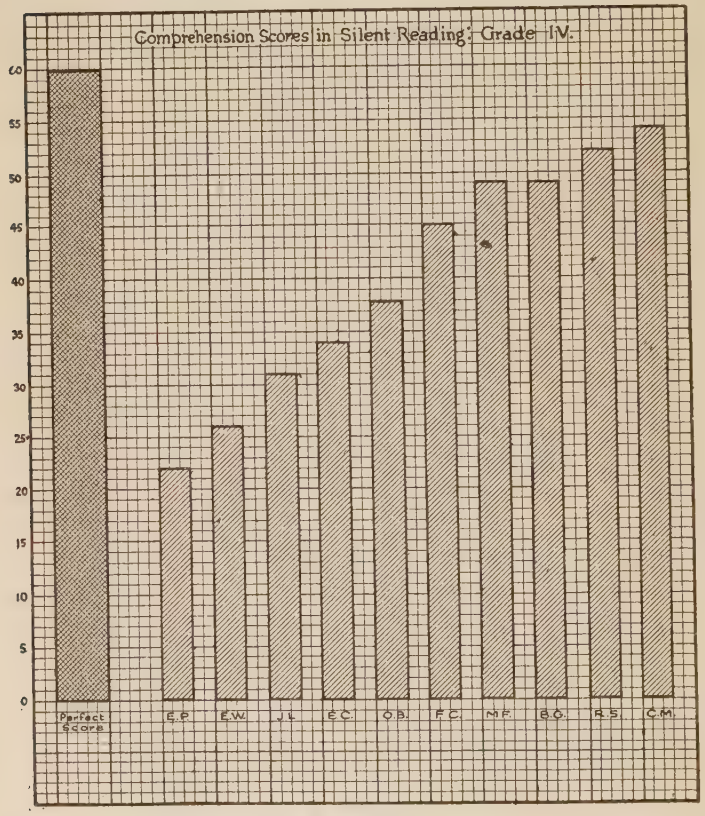

FIGURE 4

The pupils should be allowed to ask questions, if they do not understand the teacher's directions for preparing these charts, but since comprehension is tested by the ability to interpret, it is well to encourage them to be independent and self-reliant. After a little practice, pupils learn to follow directions accurately and to make very neat charts. (See the specimen chart on page 274.)

The following directions were given to a fourth-grade class which was to chart the results of a comprehension test in silent reading. The teacher had already constructed some charts on the blackboard and on large sheets of charting paper, as an introduction to the work that the pupils were to do independently. Each pupil was supplied with a sheet of charting paper ruled in half-inch squares, each of those containing twenty-five smaller squares. They used soft colored crayons to mark their charts. When all was in readiness to begin, the following questions written on the blackboard were displayed, and the children were asked to follow them.

1. Yesterday we took a silent-reading test. Today we shall chart the results.
2. A colored column will represent each pupil's score.
3. Make each column three small squares wide. Leave a space two small squares wide between columns.
4. Mark off one small square of height for every point that a pupil made.
5. The height of a column will indicate the pupil's score in points.

6. Print the pupil's initials below the column that indicates his score.
7. If you had made a perfect score your grade would have been 60.
8. The following scores were made:

Earnest P.	22
Esther W.	26
Jack L.	31
Evelyn C.	34
Olive B.	38
Fred C.	45
Mabel F.	49
Bruce G.	49
Roy S.	52
Clara M.	54

9. At the left-hand side, start at the bottom and go up along the margin, numbering the small squares by 5's so that it will be easier to count them off.
10. Draw a column 5 squares wide and 60 squares high. That will show what a perfect score looks like. Color the column bright red. Print "Perfect Score" very neatly at the bottom of the column.
11. Color all other columns blue. Leave a space of five small squares, then draw a column to represent Earnest's score. Be sure to make it 22 squares high and 3 squares wide. Place Earnest's initials, "E. P.," at the bottom.
12. Now make the other nine columns, then let us see whose chart looks best.
13. You must always make a chart so that anybody can read it and interpret it. Let us label ours.

At the top of your paper print "Comprehension Scores in Silent Reading: Grade IV."

Organizing the lesson. In addition to the lesson plans that incidentally give training in organization, the teacher should conduct special drills which will train pupils to organize. Upper-grade and high-school teachers realize that pupils lack the ability to organize, and that they are handicapped in consequence. Often, however, they are not inclined to give pupils much help in organization because it is claimed that such educational spoon feeding makes children dependent on the teacher. This is hardly the case, but if the teacher has any such fear she may vary the exercises designed to teach lesson organization so that considerable demand is sure to be made on the pupils.

There are many devices which may be used to train children in lesson organization. The teacher may require pupils to relate a story which they have just read, the class checking the accuracy of the oral reproduction. Problem assignments are effective. In making a fourth-grade assignment on some subject, for example, on "Cotton," the teacher may explain in advance that the lesson discusses certain main topics, among them, the source of the cotton supply and the method of producing the crop. In the following day's discussion the teacher should insist that each child's organization of the lesson be based on those two topics. A third plan for drill in lesson organization is to ask pupils to read the entire

lesson, decide on two or three main points of the assignment, then outline the whole as a class exercise.

Training pupils to retain. Helping pupils to retain what they read presents serious difficulties even to the best teachers. Every scientific study including a delayed-recall test has shown that even within a week's time children forget much of what they read. Such studies indicate that frequent reviews of essential topics included in an assignment will aid children to retain.

Careful and thorough lesson organization helps pupils to retain lesson content, because making a logical, well-organized outline enables them to see parts in their relation to the whole. A good lesson organization implies the association of minor points under their proper headings, and that in turn means that the pupil has had to concentrate on what he read, and that he has had to review the main points of the lesson in order to make a proper evaluation.

SUMMARY

1. The subject-matter of silent reading in the third and fourth grades should include the material contained in the history, hygiene, and geography textbooks as well as that in the readers ordinarily used.
2. The material selected may be used for silent-reading and subsequent class discussion and as the basis for drill exercises to promote speed and comprehension.
3. Satisfactory methods which will motivate purposeful and rapid silent reading include having pupils (*a*) read intensively for two minutes, then discuss the material read; (*b*) "race" to answer questions asked by the teacher; (*c*) read a story within a time limit, then

undergo a comprehensive test; (*d*) read the entire story with one or more objectives in mind.

4. Silent-reading lessons and drills should create a proper attitude toward reading. They should lead the pupil to see that the subject-matter contains interesting material which he will enjoy. They should provide drill exercises which will promote concentration and purposeful reading, and they should encourage much reading outside of class.

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CHAPTER XIV

SILENT READING IN GRADES V AND VI

Silent reading in intermediate grades. Although educators do not agree on the time when silent reading should be introduced into the primary grades, they are almost unanimous in saying that it should be emphasized in the fourth grade and those above. The more advanced the grade, the less difficult it is for the teacher to select suitable material and devise effective exercises.

Subject-matter of silent reading. Fifth and sixth-grade teachers should readily be able to obtain an abundance of material for use in silent-reading classes. They may use the subject-matter of the ordinary readers, of geography, history, hygiene, and nature-study textbooks, and of pamphlets that treat of topics which are important to the child.

How to use silent-reading material. The materials suggested may be used either for silent-reading lessons which are followed by class discussion, or as the basis of effective silent-reading drill exercises.

Half a recitation period may profitably be used for reading an assignment silently. Most pupils find much pleasure in such silent reading. The remainder of the period may be spent discussing those characters and

incidents of the story which appeal most strongly to the children.

Another effective plan, which may be used in classes studying purely literary material, is to have pupils read their lessons with a view to determining which parts are most beautiful and expressive. When differences of opinion arise, as they surely will, each should read his paragraph aloud, then give the reasons for his choice. Such oral reading is thereby pupil-motivated, because the child feels that he must present his passage to the class audience in such fashion that others will feel the emotions which he feels, and visualize the scenes as he visualizes them.

During the last few minutes of the silent-reading period, teacher and pupils should analyze the material read in order to select the chief incidents and to determine which statement contains the central thought of the selection. That done, the pupils should make summaries or outlines of the selection. Such exercises furnish excellent practice in learning to discriminate among points of major and minor importance, a valuable ability which pupils should acquire as early as possible. The pupils should receive the teacher's help and guidance throughout the work, however, because organizing is a complex process. Not until later should they be asked to work independently.

The style and content of the selections usually found in readers prepared for the upper grades offer an opportunity to develop a wholesome taste for reading matter

of the better kind. Reading good literature and discussing it in the classroom gives many children their first true conception of others, and often inspires to deeds of altruism. Those who realize the power of suggestion in child life well know the importance of good reading matter.

Pupils should be allowed fully to discuss the motives that may have prompted the characters of the story to play their roles as they did. In so far as possible they should think out the causes and effects of the incidents related. The teacher should promote such discussion by well-chosen questions, and she should encourage pupils to relate their personal experiences which seem to bear a relation to the material being discussed.

Specimen silent-reading lessons. On the following pages we suggest methods for handling such representative selections, typical of the material found in the best textbooks. The plans outlined are designed to develop an appreciation of good literature and to help pupils obtain more real pleasure from their reading and re-reading of prose and poetry usually assigned. The teacher should never lose sight of the chief aim of all such work, namely, to help pupils get the greatest possible amount of pleasure from their reading.

In many instances, and especially when a story has a historical setting, as has the tale of Robin Hood,[1] it is

[1]This story of Robin Hood is taken from the Fifth Reader of the Free and Treadwell *Reading-Literature Series.* The entire story is not given. Only those paragraphs on which we based the questions of the specimen lesson have been presented here.

well for the teacher to give a brief introduction before pupils undertake to read the selection from their books. In this case, the introduction should consist of some account of the conditions that obtained in the days of the legendary Robin Hood, the inequality of the classes, the attitude of the peasants towards the rich and of the rich towards the peasants, the role of the ruler, and the prevailing notions of justice and fair play. As a motive for reading the story, the teacher may explain that it is an account of a band of merry outlaws and the experiences that they had.

Type Study: A Prose Selection

Robin Hood, the Archer Hero

Long years ago, when good King Harry ruled, there lived a famous archer, Robin Hood by name. He abode in the depths of the great Sherwood Forest, on the border of Nottingham town. There roved with him some seven score merry men.

* * * * * * * *

And this is how Robin Hood fell afoul of the law and had to live in the forest.

When Robin was about fifteen, strong of body and brave of heart, a shooting match was set by the sheriff of Nottingham, who offered a prize of forty marks to him who would shoot the best shaft in Nottinghamshire.

* * * * * * * *

Then up spoke Robin right merrily, "Our king hath provided a shooting match at Nottingham, and I'm ready with my bow."

"What ho!" cried the forester in scorn, "how can

a boy so young bear a bow? Why, he is not able to draw one string."

"I'll wager you twenty marks," cried Robin, "that I'll hit a mark at a hundred rods." Whereat all the men in green garb roared with laughter.

* * * * * * * *

Then Robin gripped his bow and let fly a broad arrow. On it sped to the border of the glade and the noblest hart of the herd leaped high in the air and fell dead.

* * * * * * * *

"Ha!" cried Robin, "What think ye of that shot? The wager is mine even were it a thousand pounds."

All the foresters arose shouting with anger, "Get thee gone, thou has killed the king's deer. By King Harry, thou shouldst lose thy ears."

Questions

1. Why did the foresters encourage Robin Hood to shoot at the deer?
2. Do you think Robin Hood was boastful?
3. What do you think of the vows of Robin Hood's band?
4. Do you like Little John? Why?
5. Did you ever read or hear of beggars like these? Should we refuse to help beggars today? If you were to help them, how would you do it?

TYPE STUDY: A POEM[1]

The Bell of Atri

At Atri in Abruzzo, a small town
Of ancient Roman date, but scant renown, —
One of those little places that have run

[1]This study is based on Longfellow's "The Bell of Atri" which appears in the Fifth Reader of the Free and Treadwell *Reading-Literature Series* published by Row, Peterson and Company, Chicago. The entire poem is not reproduced. Only those portions on which we based the questions of the specimen lesson have been given.

Half up the hill, beneath a blazing sun,
And then sat down to rest, as if to say,
"I climb no further upward, come what may,"—
The Re Giovanni, now unknown to fame,
So many monarchs since have borne the name,
Had a great bell hung in the market place
Beneath a roof, projecting some small space,
By way of shelter from the sun and rain.
Then rode he through the streets with all his train,
And, with the blast of trumpets loud and long,
Made proclamation, that whenever wrong
Was done to any man, he should but ring
The great bell in the square, and he, the king,
Would cause the syndic to decide thereon.
Such was the proclamation of King John.

* * * * * * * *

By chance it happened that in Atri dwelt
A knight, with spur on heel and sword in belt,
Who loved to hunt the wild boar in the woods,
Who loved his falcons with their crimson hoods,
Who loved his hounds and horses, and all sports
And prodigalities of camps and courts,—
Loved, or had loved them; for at last grown old,
His only passion was the love of gold.

Making the Assignment

I. Read the entire poem carefully, keeping in mind the questions mentioned under heading III.

II. Find the meanings of all unfamiliar words.

III. Answer the following questions:

1. Do you like this story? Why?
2. In what ways does this poem remind you of the story of "Black Beauty"?
3. Do our dumb friends now need a bell of justice like the Bell of Atri?

4. How can we help to secure more humane treatment for dumb animals?

Directions for Class Study

I. Read the sentence included in the first eleven lines. When you finish, indicate by looking toward the teacher. Wait quietly until all are through.
   1. What is a good title or subject for this sentence?
   2. What part of the sentence is expressed in the most pleasing way?
   3. Why do you think so?

II. Read the second sentence silently. When you finish, indicate as before.
   1. What is the main idea of this sentence?
   2. What was the proclamation?
   3. Did it cost anything to claim justice in this way?
   4. Did a poor man have as much chance to obtain justice in the court as the rich man had?
   5. Would a free court be good for the people now? Explain fully.

III. Read the next paragraph silently, as before.
   1. What title might we give this paragraph?
   2. What kind of life had the knight lived?
   3. How did his selfishness show itself in his old age?

The remainder of the poem may be treated in a similar manner. In order to vary the exercises, the teacher may in some instances ask her questions before the children read the paragraph silently.

Directions for Oral Reading

This selection is good material for oral reading. Although much of it is ordinary narrative presenting but little difficulty, the speeches of the various characters require careful attention if they are to be read correctly. Questions like the following, which direct the pupil's attention to the poem, help children to read with proper expression.

1. In what tone of voice would the knight be likely to speak the soliloquy at the bottom of page 46?
2. What is the feeling of the syndic when he sees that a horse is ringing the bell?
3. In what tone of voice would the syndic pronounce his judgment?
4. What feeling does the king express?

Organizing the Selection

After the selection has been thoroughly studied according to the plan outlined, it may be used as material for teaching pupils to organize. The following suggestions to the class will help children to attack the problem of organization in such a way that good results are almost assured.

1. Write a summary of each of the parts of the poem. The summary should consist of a single sentence or phrase.
2. Group the summaries under three general headings.
3. Follow the same plan to outline an account of some personal experience.

4. Relate the account of your personal experience so that the class may decide whether your story is told as clearly and in as orderly fashion as Longfellow tells his tale in verse.

Reading tests. Fifth and sixth-grade reading classes should be tested from time to time in order that teacher and pupils may learn how thoroughly the reading is being done. The information obtained from such tests enables the teacher to increase the interest and efforts of the pupils and to devise and apply remedial measures if necessary. The administration of written tests promotes habits of thoroughness, because such tests urge pupils to read more attentively and to exert greater effort to retain the chief points in the matter which they read. The maturity of the pupils and the highly factual character of the subject-matter are favorable to a considerable amount of such testing; however, it must not be done at a sacrifice of time that should be devoted to other school work, nor should it burden the teacher.

Because pupils tend to regard the many facts of a lesson as equally important, the teacher should use the study question and the problem assignment to develop their powers of discrimination and evaluation. One need not expect children to discriminate among major and minor topics unless they have been trained to do so. Too many teachers forget that the word "assignment" literally means "a pointing of the way," and that every good assignment must do that by means of definite directions and the explanation of difficult parts of the lesson

about to be attacked. Until pupils have learned how to study, the teacher should suggest the central idea and important points of every lesson that she assigns. She can do that by asking well-directed questions, and by having pupils read material that contains the facts which enable them to solve a particular problem.

Adapting the test. The nature of the test that is used should in every case be in keeping with the character of the material which is being studied. The treatment of literature, read either to develop or to present certain humanizing and socializing concepts, must differ from that accorded scientific subject-matter. Tests based on purely literary material must be designed to discover how well children are able to grasp ideals and to sense emotions. Tests based on the subject-matter of historical and scientific textbooks should aim to discover how accurately pupils read and how well they comprehend. The power to concentrate on what is being read, and the ability to do rapid, purposeful reading may be developed by using drill exercises based on lesson material. The specimen lessons that follow give suggestions for doing that sort of work.

Type Study: A History Lesson

Abraham Lincoln[1]

Abraham Lincoln was the President during this dark time in our nation's history — the Civil War.

He was not a handsome man, not a scholarly man,

[1]This selection is taken from Mara L. Pratt's *American History Stories* (Vol. 4, pp. 5-12) published by the Educational Publishing Company, Boston.

not a society-mannered man; but a more honest, more loyal-hearted, more grand-souled man than Abraham Lincoln never stood at the head of our government. He was as honest as George Washington, as sturdy as Andrew Jackson, as brave as the bravest general, and, in the end, as noble as the noblest martyr.

He had had a hard life as a boy. He had been brought up on a farm, first in Kentucky and later in Indiana, where he had learned to hoe and to plant, to drive oxen, to build a log house, to split rails, to fell trees — everything that a farmer boy away out in a new country would have to do, this boy had done. Indeed, when he was named for President by the Republican party, the opposing parties sneered at him, calling him a "vulgar rail-splitter," "an ignorant boor, unfit for the society of gentlemen."

But for all his hoeing and his rail-splitting, for all his poverty and his hard labor, for all his rough home and his common companions, Abraham Lincoln soon proved that he had a something in his head and in his heart of which any gentleman might well have been proud — a something that a world of fine houses and fine clothes could not buy — something which, by and by, prompted him to set all the poor black men and women in the United States free.

Although Abraham Lincoln did live in the backwoods, and did not go to school, nevertheless, he was all this time in the best of society. Fortunately for him, his mother was a real lady in heart, and tried always to keep her boy from growing up a coarse, ignorant "rail-splitter," as his party opponents called him. She taught him always to keep his eyes open, and his mind awake to the beauties about him in nature. She taught him that it was a noble heart that could see God in the beautiful flowers, in the birds, in the fields, in the forests, and in the waters; that it was the artist's soul that loved to watch the beau-

tiful sunset lights and the deepening shadows; she taught him to read the few books she owned, and helped him to earn a few more; she encouraged his love for reading, and was careful that his reading was always of the best kind.

We have suggested five methods of handling this material; the teacher may use any or all of them as the needs of the class or the character of the material warrant. Some of the methods may be applied to almost any kind of subject-matter likely to be placed before fifth and sixth-grade pupils.

(I)

The teacher should write on the blackboard a list of questions similar to the following and read them with the pupils before they undertake to read the assignment. When that has been done, she should ask the class to read the assignment carefully with a view to answering the questions. When pupils have written as many answers as possible, they should refer to the textbook for answers to the questions on which they failed.

1. What three qualities helped to make Lincoln great?
2. Why did his opponents call him a "vulgar rail-splitter"?
3. What was the "something that a world of fine houses and fine clothes could not buy"?
4. Who were Lincoln's teachers?
5. What three things did his mother teach him?

(II)

The following questions of the judgment type are sometimes called "interpretative questions." Although

developing habits of alertness and close and rapid reading, they are valuable because they promote the habit of thinking and evaluating without which speed in reading is of slight value.

Pupils should silently read the assignment before seeing the questions, then answer as many as possible. they may not be as effective as factual questions for They may read the selection a second time, if necessary, in order to find answers which they could not remember from the first reading. The following questions are typical of the sort that should be used.

1. Do you think the hardships that Lincoln experienced were influential in making him a great man?
2. Do you think it necessary for all aspiring boys and girls to pass through hardships?

(III)

Discriminating reading may be encouraged by allowing pupils to read a selection in any manner they choose, knowing that they will be asked to write answers to a series of questions which will be given to them during the recitation period.

(IV)

Pupils may be allowed to take sides and "race" to see who can first answer the questions asked by the teacher. The side answering the greatest number of questions is regarded as the winner. The teacher should make sure that the questions used in an exercise of this kind have not been made familiar by inclusion in previous tests.

(V)

Pupils should read a selection once, then prepare questions for use in class discussion. The class may

be divided into two groups, one of which originates questions to be presented to the other. At the conclusion of the exercise, teacher and pupils may profitably discuss the merit of the questions that were presented. An interesting variation of this exercise is to have one group of pupils make an outline of the subject-matter and present it to the other group for criticism.

The exercises based on the following geography lesson (part of one day's assignment) are suggestive of plans that help to increase pupils' speed and increase their power to comprehend. Such methods develop purposeful reading of assignments in history, hygiene, nature study, language, and arithmetic. Some teachers use the last half of each recitation period to direct the reading of the new asignment, having the pupils read the new assignment with a view to finding answers to study questions prepared by the teacher. When the use of this plan has enabled pupils to read a new assignment carefully and understandingly, they should undertake to outline the subject-matter of the next day's lesson independently.

Type Study: A Geography Lesson

Philadelphia ranks third among the cities of the United States in population. Lines of steamships run from Philadelphia to the leading seaports of the United States and foreign countries, carrying passengers and a multitude of products. Because of its nearness to the coal fields, Philadelphia has become a great shipping point for coal. The coal and iron have made possible the manufacture of cars, heavy machinery, and ships. Philadelphia is a great textile manufac-

turing center, making especially woolen goods; there is much manufacturing of clothing; and in carpet manufacture. This is the most important city in the country.[1]

(I)

Before the pupils read the paragraph tell them that there are three reasons why Philadelphia is a large manufacturing city. Have them read the paragraph and then write the reasons without again referring to the selection.

(II)

Have pupils read the paragraph silently, then outline the topic discussed without again referring to the book. This method should be used after pupils have had the training suggested under heading I.

(III)

Instruct the pupils to read the paragraph through once, and afterwards test them to determine whether they have grasped the main points of the material read. Give two questions based on the chief topics discussed. Questions for this paragraph may be: Give three reasons why Philadelphia is a great manufacturing center. Name three articles manufactured in Philadelphia. When the pupils have written the answers to the questions, they should exchange papers for correction and report the results to the class.

(IV)

Ask pupils to write three reasons why Philadelphia is a great manufacturing center, then have the class read the paragraph in order to see how many reasons given were right.

[1]This selection is taken from the *Tarr and McMurry Geography: Second Book* (p. 66) published by The Macmillan Company, New York City.

(V)

Write questions about the subject-matter of the assignment on 3 x 5 cards, placing one question on each card. Distribute the cards, placing them face down on the desks. Have the class read the assignment. When all have finished, have each pupil in turn look at his card, read the question aloud to the class, and give the answer if possible.

Type Study: A Lesson in Hygiene

A silent-reading lesson in hygiene, suitable for use as the basis of drill work, was based on a pamphlet which the Red Cross Society asked sixth-grade pupils to take to their homes during a recent health crusade. After devoting two periods to a discussion of the topic "How to Be Healthy," the pupils were told to suggest diseases likely to be most prevalent in their community, and to tell which of those should be most carefully guarded against and cared for.

After the pupils had agreed that tuberculosis should receive a large amount of attention, they were given a pamphlet published by the New York State Department of Health entitled, "What We Should Know About Tuberculosis." That was used in conjunction with the chapter on the same subject in the class textbook of hygiene. Following the silent reading and the study of the material, exercises similar to those already suggested in this chapter were given as a means of testing the pupils to determine how well they understood what they read.

SUMMARY

1. It is reasonably easy to teach silent reading to fifth and sixth-grade pupils because they have mastered the mechanics of reading and can read extensively.
2. Because the subject-matter generally used in these grades is well organized and rich in highly factual content, testing and training pupils to comprehend and organize is a relatively simple matter.
3. In teaching silent reading to pupils of these grades, certain selections should be discussed in class in order to develop appreciation. Much supplementary work should be done, and the teacher should conduct intensive drills designed to develop speed and the ability to comprehend and organize.
4. Pupils should be encouraged to apply the methods of study learned in the silent-reading class to the work done in other subjects.

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CHAPTER XV

SILENT READING IN GRADES VII AND VIII

Teaching pupils to study. Teaching pupils of the advanced elementary grades and of the junior high school how to study economically and effectively is quite as important a matter as teaching them silent reading as an end in itself. At this period of school life pupils may be led to realize that the possession of skill in acquiring knowledge, and an effective method of using that skill, are really of more importance than the possession of the knowledge itself. It is comparatively easy to arouse an interest in methods of study, by showing pupils the advantage of economical plans and effective devices. The teacher's first task, then, is to do that by helping her pupils become rapid and purposeful readers. It is advisable to use a part of each recitation period for developing a method of effective study. The last five minutes may often be used to advantage for making an assignment in such a way that pupils have definite problems to work on.

Experiments in learning to study.[1] Interest in the problem of establishing effective study habits led the

[1]Germane, Charles E. "The value of the controlled mental summary as a method of studying." *School and Society*, Vol. 12, (December) 1920.

authors to conduct an experiment in an eighth-grade class a few years ago. In order to ascertain the ability of the pupils so as to determine what sort of training they needed, it was necessary carefully to check the rate at which they read one of their assignments, a history lesson of about the usual length. The slowest reader read 106 words per minute, the fastest 428 words. A seven-minute test designed to measure comprehension and retention, given immediately after the reading, showed scores ranging from 10.4 per cent to a trifle less than 50 per cent. These data convinced teacher and pupils that it was necessary to increase the speed of reading, and to acquire some method that would enable the reader quickly to grasp the main points of what he read.

Types of reading ability. As the test revealed three types of readers — rapid, medium-rate, and slow — the class was grouped into two divisions for the purpose of drill. One group included the rapid readers and the medium-rate readers who had made high scores on the speed test, the other included the slow readers and those pupils of the medium-rate group who had made low scores. The intention of the authors was to develop methods of effective study by means of drill exercises. To that end they selected material from the textbooks used in the eighth grade; the topics covered were "The 'Sweating' System," "Tuberculosis," "The Conservation of Human Life," "Immigration," "Child Labor," and "Unemployment." Four days per week for four

weeks the class spent twenty-five minutes daily, the last half of the recitation period in social science, in a consideration of some of the fundamental principles of study and their application to the material being studied.

The two groups of pupils were united for the first two lessons. During the first recitation period, which was devoted to a consideration of the principles of study and their application to one of the selections chosen, class discussion brought out the necessity of paying close attention to the title of an article that one reads, and to the importance of the mechanical features of printed matter — paragraph headings, marginal notes, italicized words, etc. The teacher explained that the title of an article always merits careful consideration, because it is usually an index to what is to be found in the article itself.

The "key sentence." It was also made clear that in every well-written paragraph the first or second sentence is usually what one may call a "key sentence," which gives an idea of what is treated in the paragraph. Pupils were advised to read the last sentence of a paragraph carefully because it usually summarizes what has preceded. The teacher explained that the body of a paragraph — the middle portion — is usually only an elaboration of the theme stated in the opening sentences, and also that the summary, which as a rule appears in the concluding sentence, makes it unnecessary for one to read all parts of a paragraph with the same degree of close attention.

It must be clearly borne in mind that although pupils were strongly urged to give particular attention to the key sentences, they were likewise told that if they carefully read the first sentences, in which the author states his aim or point of view, they can then read the other sentences more rapidly, more purposefully, and more understandingly. In fact, if one catches the meaning of the key sentence, it is often possible even to "skim" a paragraph without at all failing to comprehend it.

The following paragraphs, chosen from the lesson on "The 'Sweating' System," illustrate the key sentence and show its relation to the remainder of the paragraph.

The conditions which not only make possible, but encourage, the sweating system are, first, a crowded population in large cities; second, high rent; and third, contract work. The crowded population in the large cities offers a large available amount of labor which can be secured at a very low price. A large foreign population naturally industrious and thrifty, where the women and children and often the men have no regular work, is easily exploited by the sweaters, and offers many victims to their grinding system.

The key sentence of the preceding paragraph is obviously the first one. It concisely sets forth the theme which is expanded in the remainder.

The contractor, or sweater, is one who makes a special business of employing immigrants. The man best fitted to be contractor, or sweater, is said to be the man who is well acquainted with his neighbors, who is able to speak the language of several classes of immigrants, . . . etc.

The main idea of the above paragraph is the definition of a "sweater." The remainder of the paragraph amplifies the definition.

The many reports of investigations that have been made in regard to the sweat shops have been unanimous in speaking of the unsanitary conditions within these places. They are invariably found in the most crowded quarters of the cities, in old tenement buildings utterly lacking in modern conveniences. Families of from three to five or more are found living in two or three-room apartments, in small rooms poorly lighted and poorly ventilated, with walls and floors often out of repair. For entire families to work, cook, eat, and sleep amid such unsanitary conditions as these, working long hours and often seven days of the week, in close, unventilated rooms, means a condition of labor that is not only a menace to health, but to all home and social life.

The preceding paragraph well illustrates how the main portion elaborates and expands the theme stated in the key sentence.

The "key paragraph." The second lesson was devoted to a discussion of the "key paragraph." The teacher explained that the key paragraph presents that problem and its phases which the author undertakes to treat as a whole in his article. The two following excerpts, taken respectively from the articles on "The 'Sweating' System" and on "Immigration," illustrate the character of this sort of paragraph. The second is a particularly good example.

There are two principal causes for the growth of the sweating system, which should be discussed at

some length. These causes are the kind or nature of the work, and the kind of labor supply.

Some Americans early protested against the wide-open door for immigrants. Some of the objections which they advanced were foolish and some were wise; some were narrow and selfish; others were based, not on ill-will toward the foreigner, but on the desire to make America a united nation, well governed and prosperous. At the same time there were advocates of the wide-open door who objected to interference with immigration.

One may observe that the preceding paragraphs suggest what is to be treated in those that follow. It is a simple matter to get pupils to note this fact and to make good use of it. As this experiment showed, pupils who carefully read the key paragraph need to read carefully only two or three sentences of each of the succeeding paragraphs in order to grasp the thread of the author's argument as he develops his theme.

For the third lesson, the class was divided into two groups as originally planned. The group of slow readers was drilled on rapid reading and thought-getting. Some of the devices suggested for use in the third and fourth grades were used for this work. Pupils were asked to find answers to the teacher's questions, and they were taught to "skim" the page in search of particular phrases and words. The latter exercise was intended to develop the habit of forming a wide eye-span. At this time the group reviewed the principles of economical study which had been discussed on the

two preceding days, and each pupil was required to find at least two key sentences.

Questions based on topic headings. During the third recitation period the group of rapid readers compiled a list of seven questions based on "The 'Sweating' System" for use as a written test for the slow group on the following day. That plan was adopted for use with brighter pupils in the hope that it would cause them more quickly to apprehend the relationship between the paragraph headings and the important divisions of the article, and also that they might learn to base questions on topics.

The two groups were again united for the fourth lesson. The seven questions prepared by the rapid readers were placed on the blackboard and discussed by all, the teacher acting as referee. The aim of the discussion was to determine whether or not the questions proposed really were based on the important topics in the article. The net result of this exercise was that many pupils, who previously had read their assignments without thought of discriminating among major and minor points, now learned from teacher and classmate just how they should proceed in order to make such a discrimination.

The "hub and spoke" device. The plan of outlining a lesson as the hub and spokes of a wheel (a device we have already described) was effectively used for this exercise. The whole problem, "The 'Sweating' System," was regarded as the hub, the main topics, which

pupils agreed on, became the spokes. This device, artificial as it was, aroused genuine interest in the discussion.

At the conclusion of this lesson the teacher could observe that certain definite aims had been accomplished. The pupils had become acquainted with some of the fundamental principles of effective study; they had acquired some skill in applying those principles to the material under consideration; they had reviewed their lesson a number of times, and so, to some extent at least, insured the retention of the outstanding facts and arguments.

The treatment of the other articles chosen for study by this class differed somewhat from that which we have just described in detail. The latter, however, suggestive of the general scheme of all, indicates the kind of training which pupils in the upper elementary grades usually need. Although classes should as a rule be divided into groups for the exercises in rapid reading and thought-getting, so that those of more nearly equal ability will be competing, nevertheless it is advisable to combine the groups of fast and slow readers whenever practicable. The latter plan should always be adopted when one group prepares questions or outlines for the approval or use of the other. Joint discussion of such material is one of the most valuable features of this training. Many other plans and devices are available, however, in the articles on this phase of instruction which have recently been published.

Other effective methods. The teacher can arouse pupils to a realization of the importance of selecting the main points in a lesson by having them consider test questions based on the assignment before it is read. That plan conduces to purposeful reading, reading in order to get the thought, as the authors have shown by an experiment.

A section consisting of 186 sixth, seventh, and eighth-grade pupils was divided into two groups of equal comprehnesion ability. A seven-page article on "Tuberculosis" was given to one group, with instructions to read it through as many times as possible in a thirty-minute period. The same article was given to the second group, with instructions to read it carefully and to make a mental note of the answers to the following questions.

Name ten causes of tuberculosis.
Describe seven symptoms of tuberculosis.
Name five preventives of tuberculosis.

At the conclusion of the thirty-minute period a test based on the material was given to both groups. Pupils who had had the questions in hand while they read the article excelled those of the other group by an average of 50.3 per cent. In the judgment of the authors, this experiment shows that rapid, thoughtful reading can be achieved by making speed and thought-getting the objectives of reading exercises.

An effective test for determining whether or not pupils are acquiring the ability to read rapidly and well,

is to require them frequently to make summaries and outlines of the subject-matter of their assignments.

Speed in reading and a high degree of comprehension may be obtained by asking pupils to read a selection, they being informed beforehand that their rate will be charted, and that when they have completed the single reading they will be given a written quiz, the results of which will also be tabulated. Knowing that their standing will be computed and charted usually causes pupils to exert an extra effort to read rapidly and understandingly.

Silent reading in the English class. As we have already said, many high-school pupils have not learned to reflect as they read or to assimilate what they read. Such pupils have little if any idea of the mental process involved in reading. They regard reading as a receptive process rather than a creative one; they regard the words of a story as the story itself. As a matter of fact, the words are only a means of kindling the imagination; words only cause us to look deeply into the thought wells of past experience. Usually it is not altogether the pupil's fault that he has this notion of reading. His present ability to read has been determined by the kind of material he has read, and by the way in which he has been permitted to read.

The English teacher's opportunity. The teacher of upper-grade English has a great opportunity to develop the pupil's ability to read well, and to train him in the use of effective study habits that he may use in

all his work. The diversified reading material used in English classes offers a wide range in the choice of subject-matter. It is well within the English teacher's province to give instruction in the use and significance of titles, marginal notes, and headings. She should also teach the meaning of the topical sentence and key paragraph, and she should teach children how to organize what they read into summaries and outlines. Comprehension, discrimination, evaluation, and organization may all be taught in the English class.

It is this oportunity of the teachers of English to conduct such training economically and advantageously that has prompted school authorities, who recognize the need of developing a scientific method of teaching reading to seventh, eighth, and ninth-grade pupils, to assign the task to the English department. The diversified subject-matter which that department is able to offer its pupils, the opportunity for developing different mental sets or attitudes as a consequence of that diversity of subject-matter, and the intimate relationship that many topics discussed in the English class have to the formation of effective study habits, all point to the English department as the proper agency for teaching correct reading habits.

Lyman's plan of instruction.[1] Lyman proposes that one day of each week be set aside for conducting laboratory exercises in silent reading in each seventh and eighth-grade English class. The remaining four-fifths

[1]Lyman, R. L. "The teaching of assimilative reading in the junior high school." *School Review*, Vol. 28, (October) 1920.

of the time allotted to English is to be devoted to the subjects ordinarily taught — literature, oral reading, composition, grammar, and spelling — as is the usual practice. This program, outlined and discussed on the following pages, is a valuable contribution to teachers of English who do not have time to work out a course of study that correlates English and silent reading. The thirty-six lessons are suggestive of the type of material and the sort of methods that any teacher may use as a basis for her work.

Silent-reading Objectives for the Seventh Grade

First month

Speeding up the silent reading.

a) Tests to acquaint pupils with their rate of reading.
b) Attacking new words boldly. (Individual difficulties in word analysis, etc.)
c) Trying to see several words at one time. (Grouping and phrasing for perception of thought groups.)
d) Learning when to read rapidly and when to read slowly.

Second month

Purpose in reading. (Purpose and problems, old and new; goals.)

a) Does the reader bring a problem to his reading?
b) Does the reading itself suggest a problem?
c) Reading carefully to find one's problem.
d) Finding a new problem growing out of one's reading.

Third month

Grasping the central thought in reading. (Unity and forward movement of thought.)

a) Is the master idea in the title?
b) Finding the clue sentence and sign posts.
c) Is the master idea repeated in each paragraph?
d) Contribution of each paragraph to the master idea.

Fourth month

Getting a bird's-eye view of the reading. (Comprehending the reach; recalling main headings.)

a) Noting the plan of the writer.
b) Selecting the outstanding ideas.
c) Details building up each main thought.
d) Stopping to recall the main points.

Fifth month

Helping the writer in reading. (The reader's active participation.)

a) Two minds active in reading.
b) Reading between the lines.
c) What is the writer's message for the reader personally?
d) His different messages for other people.

Sixth month

Tying up what we know with our reading. (The meaning of assimilation.)

a) Recalling similar experiences of one's own.
b) Recalling different experiences.
c) Asking questions of the writer.
d) Tying up one lesson with another.

Seventh month

Selection in our reading. (Personal preferences.)

a) Discovering personal likes in reading.

b) Following the prompting of curiosity.
c) Determining the worth of a selection.
d) Passing by the unimportant.

Eighth month

Judging values in our reading. (Weighing the worth of statements.)

a) Whose statement may one rely upon?
b) Having our own opinions when we read.
c) The difference between knowing and guessing.
d) Being perfectly sure, and fair, and honest.

Ninth month

Making use of our reading. (Active utilization of results.)

a) Being alert to solve problems.
b) Storing away ideas for future use.
c) Putting information into action.
d) Various ways of using our reading.

The work of the first month is intended to arouse the pupil's interest in reading. It centers his attention on the speed and accuracy with which he reads, and enables him to compare his own achievements with the standard norms. Experiments conducted in the laboratory school of the University of Chicago have proved that children become greatly interested in working out exercises which develop class standards of speed and comprehension.

The work of the second month discusses the purpose of reading. The discussion leads directly to a consideration of the way many pupils attack a lesson which has been assigned by instructing the class to "take to

the bottom of page so and so for tomorrow." This month's work emphasizes the value of reading with a problem in mind, and the need of the reader's having a tendency to reflect and evaluate.

During the third and fourth months pupils learn the most economical method of getting at the substance of what they read.

Laboratory activities which are pleasing and profitable to pupils of the seventh, eighth, and ninth grades are presented during the fifth, sixth, seventh, and eighth months. The children are taught to regard their reading as an exercise to which they are privileged to contribute. They come to regard reading as a game in which they are partners with the author. Their minds become actively engaged in the reading process, they help, supplement, inquire, and direct, much as they do in the work of the oral-composition class. The dominant activities of the respective months are helping, supplementing, selecting, and evaluating.

The ninth month of these exercises completes the cycle by again directing attention to work much like that of the first and second months. The one idea now uppermost in the children's minds is to make the active utilization of results the chief goal of all reading done as study.

The following classroom devices may be used to teach objective (*b*) of the fifth month's work. These exercises are suggestive of the laboratory method of procedure.

Reading Between the Lines

(I)

Have you ever heard the expression "reading between the lines"? Let us make our own explanation of that saying.

READ: Perseverance is a great element of success.

THINK: I remember when I worked very hard and learned a difficult lesson. Another time I gave up in disgust and made a failure. The different workers in our grade are good pupils.

(II)

READ: "If you only knock long enough and loud enough at the gate . . . "

THINK: Of course, the poet can't be talking of a real gate. Knocking long and loud means repeated efforts to succeed. It means trying over and over again.

READ: " . . . you are sure to wake up somebody."

THINK: Loud noise does wake up people. But the sentence must mean more than waking a sleeping man; it means attaining success.

(III)

READ: "Count that day lost whose low descending sun . . . "

THINK: Boy Scouts take an oath to do a kind deed for some one every day. Kind deeds are not the only worthy actions. I recall one piece of hard work; I recall an unkind deed.

READ: "Views from thy hand no worthy action done."

THINK: (Pupils should develop this material.)

Filling in Between the Lines

(I)

Read: "When freedom from her mountain height
Unfurled her standard to the air . . . "
Fill in: Pride in our country's flag.
Pride in what the flag stands for.
Read: "She tore the azure robe of night
And set the stars of glory there."

Do you not see that we do not read merely words — not little black marks set together on paper? We do not read merely sentences and paragraphs. We read ideas and meanings which are often not found in the cold words before us. "And set the stars of glory there." Only seven little words! But when we read them we think of forty-eight white stars on a blue ground, each star standing for a state. We see the sisterhood of the states. They are stars of glory. All that our fathers have done, and all that their fathers did, makes the United States what she is. There is no end to the meaning we may read into the six words, " . . . set the stars of glory there."

(II)

Have the pupils select a paragraph similar to the following from their geography or some other textbook, check any two lines of the paragraph, and write those two lines widely apart on a sheet of paper. Each pupil should then fill in between the two lines with a rough sketch, a diagram, or words of his own that will make clear his interpretation of the line chosen.

In many coal mines there are rooms that have been made by digging out the coal. There is always danger that the roof of such a room may cave in because of the great weight of overlying rock and earth. To

prevent this, pillars of high-grade coal are left standing. Sometimes, too, a roof of coal is left. When this "pillar and stall" method is used, much good coal from the better layers is never taken from the ground. There is another method, known as the "long wall method," in which the miner supports the roof behind him as he works, by filling in the rock and shale. In this way, all the coal is taken out.

(III)

READ: "The American flag has been the symbol of liberty . . . "

THINK: Fill in with examples from the years 1775, 1864, and 1918.

READ: "Men rejoiced in the American flag . . . "

THINK: Fill in with the names of several nations that have done so.

READ: "When Arnold would have surrendered West Point . . . "

THINK: Fill in with a brief account of the incident here referred to. If one of the pupils can relate the story, let him do so; otherwise the teacher should tell it to the class.

READ: "If an author is worth anything, you will not get the meaning of his statement all at once."

THINK: Fill in by giving your opinion of the truth of this statement.

(IV)

A variant of this type of exercise, equally as effective as those suggestions offered, is to ask each pupil to write a sentence about one of his lessons, then exchange his paper with a classmate who reads between the lines and writes out his interpretation of the sentence. Some

sentences used in this exercise should be written on the blackboard.

Advanced silent-reading material. The well-organized, highly factual material found in textbooks of history, geography, physiology, and nature study is very valuable for use as the basis of instruction in silent reading. The abundance of it, and its similarity to the reading matter which one meets in later life, are also points in favor of using it extensively in seventh and eighth-grade classes. Teachers should use the period allotted to supervised study for training pupils to read such material effectively. If no provision is made for such work, then occasionally the last ten or fifteen minutes of the usual recitation period should be devoted to training in the formation of correct habits of study by means of drill in silent reading. The specimen lessons on the following pages are suggestive of some plans that may be used.

Type Study: A History Lesson

Give the pupils a short written test covering the main topics of the assignment before they read it. This is to ascertain how much they know about the subject to be studied, so that the amount they gain from reading the assignment may be more accurately determined. As soon as the preliminary test has been given, pupils should read the assignment through once and record their time. Then give the questions suggested on page 317, score the papers, and chart the results. Interest

may be added to this work by having each pupil chart his own results and compare his scores with the class average.

The aim of this plan is to motivate reading through the preliminary test, by showing pupils that the assignment contains material about which they know very little. When they learn that, they tend to read purposefully because they have the main topics in mind.

Immigration[1]

The first marked invasion, that of the Irish and Germans, opened between 1840 and 1850. Many of the Irish stopped in the cities and sought employment as manual laborers, or went out into the construction camps where railways and canals were built. The Germans, on the other hand, seemed from the first to prefer farming. Perhaps a major portion of them went west and bought land or entered government "domains" opened to settlers.

* * * * * * * *

A second era in the history of immigration opened about 1890. The new period was marked, in the first place, by a decided change in the nationality of the immigrants. The number coming from Great Britain, Ireland, and Germany fell off rapidly, and the proportion from Scandinavian countries did not increase. By 1896 the immigrants from Austria-Hungary, Italy, and Russia greatly outnumbered those from north and west Europe, and in 1910 nine-tenths of all the immigrants arriving in the United States were from the south and west of Europe. Jews who by the tens of thousands were driven out of Russia and Roumania

[1]This selection is taken from Beard and Bagley's *The History of the American People* (pp. 496-502) published by The Macmillan Company, New York City.

by cruel oppression, really had no choice but to flee to the United States.

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The newcomers had to settle in cities. The Russian Jews entered the ready-made garment trade in the great centers like New York, Rochester, and Chicago. Hungarians, Italians, Slovaks, and Poles took up heavy tasks like mining and iron working, which called for more physical strength. Immigrants during this period built the railroads, developed the mines, manned the coke ovens and blast furnaces, made clothing, and, in fact, furnished the labor for most of the country.

Questions

1. What two nationalities composed the first marked invasion of immigrants?
2. Where did those immigrants settle?
3. What was the cause of the lull in immigration?
4. Why did the "Homestead Act" induce foreigners to come to this country?
5. Name five nationalities that came from northern Europe immediately after the Civil War?
6. What change was there in the second era?
7. Where did these immigrants settle?
8. Name four evil effects which the low rates of steamship companies and their false advertising in Europe have on the United States?

There are several other good plans for studying the history assignment, each quite as effective as the one we have outlined in detail. Pupils may be asked to "skim" the material so as to find answers to particular questions. That exercise tends to form good motor habits in reading, broad eye-span, and short duration

of fixation. They may be asked to prepare questions for class discussion after reading this and similar subject-matter once, or they may read the assignment once, guided by three or four questions written on the blackboard.

Forming good study habits. Many students frequently reach the eighth grade with few desirable study habits. They are unable to concentrate on what they read, to read closely, or to comprehend rapidly and satisfactorily. Such pupils believe they are studying hard when they are only marking time. A detailed test which requires the recall of data contained in the assignment often shocks these pupils out of their indifference by showing them how loosely and undiscriminatingly they really do read. The lesson plan outlined below was successfully used in an eighth-grade class whose members made an average score of only 50 per cent before the plan was adopted. The test included in this method caused pupils to realize how superficially they read and made them want to use a part of each recitation period for learning how to read.

Type Study: A Geography Lesson

Towards the close of a geography lesson suggest that pupils spend the remainder of the period reading a part of the next day's assignment. Determine how many paragraphs shall be read, and instruct pupils to close their books when they read the material once, as a sign that they have finished. Note each pupil's time

and rank him as to rate. When all have finished, test the class with a list of questions which thoroughly cover the assignment.

The following lesson assignment[1] is typical of the amount of material that should be used for this exercise. The questions indicate the type that should be used.

Chicago's Commercial Advantages

For a long time there was much rivalry between St. Louis and Chicago to see which should outgrow the other. Now Chicago is three and a half times as large as St. Louis, and surpasses all other cities in the North Central States much as New York surpasses those in the Northeastern States. What has led to such remarkable growth?

There are three facts about its location that give Chicago a great advantage for trade in farm products.

First, it is much nearer the center of this remarkably productive region than is St. Louis. The leading wheat region lies to the northwest, the Corn Belt is close at hand, and the dairy section is very near.

Second, the railroads connecting our northwestern states with the northeastern group must pass around the southern end of Lake Michigan. There is no route farther north that they can easily take. Also, goods bound for the East from districts west and southwest of Chicago can most easily go by way of the same city. Thus Chicago is a natural meeting place for routes connecting the East and the West and has become the greatest railroad center in the world. There are now more than thirty important railroads

[1]The material on which this assignment is based is taken from McMurry and Parkins' *Advanced Geography* (pp. 79, 80) published by The Macmillan Company, New York City.

that have their terminals in that city. Yet no railroad passes through the city, though the Pennsylvania Railroad trains pass directly through New York, a much larger city, on their way from Washington and Pittsburgh to Boston. How must this fact affect the handling of freight in Chicago?

With these advantages, it is not strange that Chicago has more trade in farm products than any of the other cities of this section. While Minneapolis is the greatest wheat market, Chicago is the greatest grain market, its trade in corn, oats, and other grains besides wheat being very extensive. It receives three times as much live stock as St. Louis, and sends forth more meat products than any other city in the world.

The Union Stockyards, where the cattle, sheep, and hogs are received and where the meat is packed, surpass anything else of the kind in the world. The yards and factories are so complete an organization that they resemble a city in themselves; and that section of Chicago has come to be known as Packingtown. It is worth a day's visit. Over 60,000 men are employed there, and the products have an annual value of nearly a billion dollars.

Questions

1. How much larger is Chicago than St. Louis?
2. How may Chicago be compared to New York City?
3. Give three reasons why Chicago is larger than St. Louis.
4. How may you contrast Chicago with Minneapolis?
5. Compare the amount of live stock sent to Chicago with that sent to St. Louis.
6. What and where is Packingtown?

7. How many thousand men are employed in Packingtown?
8. What is the value of the annual output of the packing industries of Chicago?

Reading arithmetic problems. It is well known that many pupils who can give a coherent reproduction of the situations recounted and described in four or five pages of narrative material are often unable to state the conditions set forth in the four or five lines of an arithmetic problem. Many teachers, believing that a pupil's inability to solve arithmetic problems is due to his failure to understand what he reads, try to overcome the difficulty by asking pupils to "read the problem carefully." That usually results in reading a problem a second time or in reading it orally; neither practice remedies the difficulty. It seems likely that pupils are unable to read problems accurately because they have not been trained to "get the story" of a problem. This view is largely supported by the results of experiments which seem to prove that the successful reading of different kinds of material demands different reading abilities, which, in turn, must be developed by different sorts of training.

A recent study[1] describes the condition that exists and suggests a method of devising means to remedy it.

Problems in books so often read: "If a man . . . , etc.," "Find the cost when . . . , etc.," or "At 6 cents for 25, what will 3 dozen articles cost?"

[1]Wilson, Estaline. "Improving the ability to read arithmetic problems." *Elementary School Journal,* Vol. 22, (January) 1922.

This flat, impersonal form of expression has no doubt grown out of providing enough problems in a book to supply the needed drill; but it works disaster in the training of pupils. Once we become aware of the dull and meaningless character of arithmetic reading, we realize that we are confronted with two important questions: (*a*) To what extent can we aid pupils to comprehend the real situation which is involved in the problem? (*b*) To what extent can fluent and correct reading contribute to the actual solving of the problem?

Making the problem real. The first step in teaching pupils to read problem material is to make the story in the problem so real and so vivid that they will realize the situation set forth. Some methods of doing this, successfully used by a group of Cincinnati teachers, are described in the following paragraphs.

The teachers first of all had the pupils study the problems assigned, just as they ordinarily studied other reading lessons — in this instance, however, for the purpose of getting the thought of the text without regard to the data of the problem. To that end the teacher placed such questions on the blackboard as would aid pupils to ascertain the meaning of the problems. Sometimes the pupils suggested questions. An example of this device is shown by the following problem and the accompanying questions based on it.

James sold 36 copies of the Saturday Evening Post at 5 cents each. He kept $\frac{2}{3}$ of the money. With the remainder he bought daily papers at $\frac{3}{4}$ cents each. How many papers did he buy?

1. How could you find out how much James would have after he sold his copies of the Post?
2. What part of his money did he spend for daily papers?
3. What part did he keep? What did he probably do with his money?
4. Why do you think he did not spend it all for daily papers?
5. How did the cost of a daily paper compare with the cost of a Post?
6. If you know how much money he spent for daily papers, and the cost of each one, how will you find out how many he bought?

Another plan was the use of the facts of a problem as the plot of a story. When doing this sort of work, the pupils read between the lines and supplied details that made the problems real. The dull facts of buying and selling were made the basis of imaginary experiences.

Such a problem as "What was the cost of 6 pounds of sugar at 8 cents a pound, 6 cans of milk at 5 cents a can, and 2 dozen eggs at 30 cents a dozen?" becomes for Louise a shopping situation. Her mother, surprised by unexpected guests, wants to make a cake. Louise has to make a hurried trip to the grocery to obtain the three necessary articles — eggs, sugar, milk. She keeps repeating the names of the articles so as not to forget the items. The grocer quotes prices as she buys each article: "Eggs are 30 cents today; sugar is down to 8 cents a pound, etc." She returns home, reports her total expenditure to her mother, and the latter, in turn,

counts up the cost again to see if Louise has figured correctly.

The same figures suggest quite a different situation to another pupil. The Boy Scout troop plans a hike. Fred's share of the necessary eats for the crowd consists of sugar and milk for the cocoa, and eggs to fry over the camp fire. Since each scout is to present his bill in order that all may share equally in the total expense, Fred carefully figures the cost of the sugar, eggs, and milk, and presents his bill in a business-like manner to the scout master.

In another class the teacher asked the pupils to devise a plan for dramatizing the story of the problems. The few minutes allowed for preparing work of this sort usually resulted in a realistic portrayal of many striking situations. One scene depicted an automobile show. An enthusiastic salesman greeted Farmer Jones and his family, showed them various cars, quoted the discounts, and rapidly computed the amounts to be saved by availing oneself of the various percentages of discount. Another effective scene depicted a millinery shop where customers called to inquire the prices of hats they had seen advertised.

The value of the method. The methods described were used by teachers who sought to measure their efficacy in terms of data showing improved ability to solve problems. One teacher's report of the results obtained in a sixth-grade class is substantially as follows. The pupils were first tested with the Stone *Standardized*

Reasoning Test in Arithmetic. Three ten-minute periods per week for five weeks were then devoted to reading problems by using the question method already described; following that, Stone's test was again given and the two sets of results were compared. The teacher reports that "the resulting improvement of a large percentage of the pupils and the raising of the class averages from below standard to above seem satisfactory returns for the time spent in problem-reading work."

Another teacher, whose class had developed considerable ability to make stories from the problems, tried to evaluate the time spent in this preliminary problem reading in terms of increased ability to solve the problems. She first placed a series of problems on the blackboard and asked the class to solve them without doing the preliminary reading and story making. On the following day the pupils were allowed to construct stories based on the same problems. Following that, they solved the problems. In comparing the results of the two days' work, the class medians showed an increase of 14 per cent in rate and 30 per cent in accuracy.

Obviously the pupils were at an advantage when they solved the problems the second time; they had profited to some extent by the first reading, although no help had been given at that time. It would seem, however, that inasmuch as the class gained 30 per cent in ability to read, although only one period was used for that work, that the time was well spent. Further evidence of the effectiveness of this method is shown by the high

score which the group made when tested by the Monroe *Standard Reasoning Test in Arithmetic* after they had been working on this plan for some time. Their score on "correct principle" was 32, the standard being only 17; for "correct answers" the class scored 17, the standard being 9.7.

A third plan, which included story-telling and dramatization, was used in an "opportunity class" of twenty children. Nineteen of this group had been given intelligence tests. Of those, eight had I. Q.'s ranging from 90 to 80, six ranging from 80 to 70, five ranging from 70 to 60. Before giving any training in problem reading the pupils were tested with Peet and Dearborn's *Progress Test in Arithmetic.* After six weeks of training, during which the pupils spent approximately ninety minutes weekly in solving problems after carefully reading them, the group was again tested with the same test, no mention being made of its previous use. The second test showed a median score of 72, as compared with a median score of 28 made on the first test.

Although the attempts to evaluate methods of teaching pupils to read arithmetic problems have not yet been made extensively enough to warrant the findings as conclusive, nevertheless the efforts that we have described include several pieces of splendid pioneer work in this field. Experiments already made have served their purpose well, if they have done nothing other than prove the feasibility of such work to investigators who may later make more extensive studies by using more

elaborate methods. But the experiments already conducted have actually accomplished another thing. They have demonstrated that when pupils once catch the spirit of reading interesting situations into the number facts of their arithmetic problems, they undertake their work with more enthusiasm and with increased chances of success. Pupils show great interest in "making up stories," in dealing with problems in this fashion. That such is true need not appear unreasonable; it is very likely that pupils have long been doing this very thing although teachers were not aware of it. The really surprising fact is that there are some children who cannot do the work at all — pupils to whom figures are something quite apart from any imagined situation.

Dramatizations and school pageants. Pageants, projects, and dramatizations are now generally recognized as effective pedagogic devices, and as a consequence they are rapidly coming into favor as teaching agencies. This is in keeping with the trend of modern pedagogy, which insists that good citizenship and morality can not be taught to the child; he must live them. Knowledge is not virtue or power except to the degree that it functions in life. Thus, the teacher's problem is that of establishing wholesome reactions, habits, and attitudes in the minds of her pupils. Many now believe that this problem can best be solved by making the activities of daily life the subject-matter of instruction, and focusing the child's interest and efforts upon a solution of the difficulties which daily life presents.

This method of instruction gives the child opportunity to think and to act independently, thus establishing habits and attitudes conducive to successful living.

The advantage of making daily activities the basis of class projects may readily be determined by planning a series of lessons on health, food, sleep, home making, city planning, fire prevention, or similar topics. A typical project of this kind, based on fire prevention, was worked out by an eighth-grade class as described below.

A lesson on "fire prevention." For three weeks teacher and pupils spent the daily twenty-five minute period discussing fire loss and fire prevention, gathering data, and reaching conclusions. They finally embodied the results of their work in concrete form, evidence of their own grasp of the subject and instructive to others who had had no share in the work.

The first day was spent discussing how best to attack the problem of fire prevention. The pupils agreed upon three objectives which should guide them in their reading and search for information: (1) How serious is the problem of fire prevention in the state and nation, as indicated by the destruction of life and property during the past year? (2) What are the chief causes of fires? (3) What can be done to prevent fires?

With those topics in mind, the pupils began reading material gathered from newspapers, magazines, and pamphlets furnished by the fire insurance companies. State and federal publications were also used. At the

conclusion of three weeks of study the pupils agreed that although destructive fires are in general due to carelessness, which seems to be an American trait, the specific causes of most of them are the following: The careless handling of kerosene, gasoline, gas, and matches; lack of attention to bonfires and burning rubbish; careless disposition of lighted cigars and cigarettes; defective chimneys and electrical wiring; spontaneous combustion; lightning.

Presenting the pageant. Having gathered the material, evaluated and organized it, and reached certain conclusions, the pupils desired to present their findings in some way which would effectively inform the other pupils and the public about the danger of fires and ways to prevent them. Accordingly, the class decided to present a pageant which should make the audience realize that carelessness is the principal cause of the unnecessary destruction of life and property by fire. The pageant was arranged to represent a mock trial portrayed by pupils who played the parts of judge, jury, lawyers, and eleven culprits, each of whom impersonated one of the chief causes of fires. Each of the culprits was appropriately dressed and placarded; for instance, Mr. Kerosene was clad in a large kerosene can made of cardboard and properly labeled. Each culprit was called before judge and jury, there to be charged with his alleged crimes; each, in turn, defended himself in a three-minute speech. When all the culprits had been heard, the lawyers summed up their state-

ments and finally the judge acquitted them. The sheriff then brought "Carelessness" before the court, where he was tried, found guilty, and sentenced.

The value of the pageant. The four hundred parents and pupils who saw this pageant were benefited by the forceful presentation of facts, as were also the pupils who worked out the material. The latter, of course, received the greatest benefit because they had actually lived the work. They learned the value of magazines and pamphlets as sources of material bearing on their projects. They learned to read rapidly and well, because they had to collect a large amount of data in a comparatively short time. They learned to comprehend, because each pupil had to read with a purpose in order to make his contribution to the class project.

The value of the entire exercise as a means of teaching pupils to organize was noteworthy. Each child had to evaluate what he read in order to sift out of his material some sound arguments with which to support his plea of "not guilty." The teacher's demand for daily two-minute reports throughout the discussion of the project gave constant practice in organization.

Retention was secured not only because pupils were required to read purposefully and to organize what they read, but also because they had to prepare what they read for use in the future.

Speed and comprehension drills conducted under time pressure added to the value of all this work. It was a simple matter to make use of those because of the

many questions raised in class, the answers to which might be found in the material being used.

The chief value of the entire project was that it taught pupils how to read rapidly and effectively with a minimum expenditure of time and effort, and moreover it kept the entire class highly interested because all were working toward a definite objective.

SUMMARY

1. The importance of developing good study habits should be emphasized in all seventh and eighth-grade classes.
2. Not only should reading be taught as such, but every lesson in every subject should be used to develop the pupils ability to read rapidly and to comprehend, organize, and retain what he reads.
3. The teacher can arouse the pupils' interest in acquiring economical methods of study by testing and charting the results of pupils' achievements from time to time, and by using the last ten or fifteen minutes of certain recitation periods for training in effective reading habits.
4. Effective methods of economical study have been worked out in experiments.
5. Correct study habits may be developed by means of the material usually studied in arithmetic, history, geography, and English classes.
6. Pamphlets are good sources of supplementary reading material.
7. Pageants are a valuable means of presenting the facts of civics.

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CHAPTER XVI

MOTIVATION OF DRILL WORK IN READING

Why drill work is necessary. If the child is to acquire effective study habits from his various reading experiences, it will be necessary to provide situations that enable him definitely to focus his attention upon that aim. In general, wholesome study habits result from a rich course of study, an ample and well-selected library, definite lesson assignments, broad reading, and good methods applied to the recitation. However, there is yet another factor: Interesting drill work is absolutely necessary if effective study habits are to be acquired economically.

Can interest in drill work be maintained? Children may be forced through a series of physical gymnastics with little skill as a result. Likewise, uninteresting reading exercises are practically useless. A mass of evidence accumulated by experiment proves that accuracy and speed in reading may often be greatly increased by means of interesting drill exercises. An experiment cited in Chapter III showed how a few minutes of concentrated drill each day for one month appreciably affected the reading rate and accuracy of the pupils.

Drill work is psychologically sound. Children instinctively love rhythm. They enjoy doing certain mental and physical exercises even for a considerable time after perfection has been reached. This fact prevents drill work from being a monotonous grind. Learning is a process of neural connecting and permanence of connections. Other things being equal, those nerve paths which are most frequently exercised become stronger. But if the exercise of neural paths is not accompanied by a feeling of satisfaction, — a "mental set" of approval, desire, and readiness to act, — little will be accomplished by the drill or exercise. It is evident, then, that interest is absolutely necessary if achievement is to be at all commensurate with the effort expended.

Regardless of the fact that there is an innate tendency to enjoy drill because of the factors we have mentioned, pupils tire of the intensive exercises suggested in previous chapters, unless those are properly administered. O'Brien[1] found that the best results in reading drills are secured when the reading stretch is from two to four minutes in length. The length of drill should, of course, vary in the different grades. Since the element of fatigue quickly sets in when pupils are forced to concentrate on reading done under time pressure, it is well to allow a minute or two for rest between the intensive reading stretches. This rest period may be devoted entirely to relaxation. The time can be more profitably used, however, by asking a ques-

[1] O'Brien, J. A. *Silent Reading.* The Macmillan Company, New York City, 1921.

tion or two about the material just read. This exercise can be varied by calling upon some of the pupils for an oral reproduction.

Motivating drill work. In so far as possible, all drill work should be pupil-motivated; that is, the motive or desire to do the thing should come from the pupil. The teacher should be careful to point out the many advantages of rapid, purposeful, and thorough reading habits. Their own records of slowness in rate and inefficiency in thought-getting, as revealed by standard tests, may awaken pupils to a serious consideration of their reading problems. The use of individual and group charts as a stimulus to better reading often proves an effective device. In brief, pupils should be made to feel that they will reap results to the degree that they earnestly and enthusiastically enter upon the undertaking.

Often a child who tries to read a very interesting story finds that his lack of familiarity with certain important words and phrases handicaps him badly. This may be made a motivation for word drill of some sort. The child feels the necessity for such drill, and consequently attacks the words with the proper mental set because he knows that a mastery of them assures him greater enjoyment. Such evidence shows that word drills should follow the reading study period.

Motivation by the teacher. Occasionally the teacher will find it necessary to create a motive for study and drill work by taking the initiative. This is called

teacher-motivation. Such is likely to be the case when the course of study is limited in scope and in its appeal to the experiences of the child. Not infrequently there is a dearth of supplementary reading material in a school. The scholastic ideals of the school and community may be below average. Under such circumstances, pupils may see little or no value in the drills or subject-matter presented. However, the enthusiasm of the teacher for the subject in hand, her knowledge of its scope and application to life, together with her ability to arouse an enthusiastic response in her pupils often saves the situation until adjustments can be made by obtaining more material which has an inherent appeal to the life experiences of the child. Even under the most adverse circumstances, however, pupil-motivation should be emphasized, because, after all, it is largely through self-expression that self-realization is possible.

The value of instinctive tendencies. "Our behavior consists largely of intelligent actions which rest on an instinctive basis. The instinctive tendencies persist and develop along intelligent lines."[1] However, the child does not learn the names and meanings of new words and numbers by means of his instincts, which represent neural connections formed before birth. Learning to read and cipher are acquired by forming new neural connections, — connections which have no immediate motor expression.

[1]Warren, H. C. *Elements of Human Psychology* (p. 245). Houghton Mifflin Company, Boston, 1921.

What, then, is the value of these instinctive traits as a means of education, if the child does not acquire knowledge by means of them? Possibly the greatest value of instincts and instinctive tendencies in the learning process is that they exert a "motivating, energizing, and driving" influence upon the neural system. Often a child might despair of learning a new word list did he not have an inborn tendency to emulate, to rival, and to win social approval. These tendencies act as an impelling influence which keeps him at work even when he sees little immediate value in a drill. The teacher's failure to use these inborn tendencies is a failure to aid the child in the realization of himself. Some of the instinctive tendencies which the teacher should utilize in reading work, especially in drill exercises, are imitation, play, emulation, and rivalry.

The tendency to imitate. The imitative tendency is much stronger and more extensive among human beings than among the other species. The vast system of connections between the various centers in the human brain makes it possible for the child, when reading, to imitate good vocal expression, good gestures, and good acting in dramatization. The value of this imitative tendency must not be overlooked. Poor oral readers are often stimulated to better reading by hearing the good readers give an excellent oral rendition of some lesson. The teacher should never allow a literary masterpiece to be read poorly. The standard should be excellence, not only for the sake of doing justice to the master-

piece, but also that the poor readers may catch the spirit of doing their work well and naturally.

The value of the imitative tendency in silent reading, especially in drills, is evident. If it is possible to create a "fashion of thoroughness and rapidity in reading" among the majority of pupils, it affords a very potent stimulus for raising the standards of all the others. Children in the primary and intermediate grades at least, are likely to enter very enthusiastically into any "fashion" or "popular school activity."

The tendency to play. Play is an instinctive tendency or impulse which is very strong in children. It finds its greatest expression in organized games. It is through play that the child learns social adaptation, much of his language, and the meaning of many things. Play in the form of games affords him a natural outlet for his physical and mental energies. His native impulses, freedom of action, and spontaneity of verbal response are too often inhibited by the artificial environment of the schoolroom. Since the school should take up the work of education where nature leaves off, it is reasonable to infer that the work in the early grades should be presented in such a way that this native tendency to play may function most effectively. For example, the "Animal Lesson" described below is keenly enjoyed by children and habituates them to rapid, concentrated, and purposeful reading.

The "Animal Lesson." After the children have learned to recognize the pictures of several animals,

prepare flash cards bearing sentences that mention characteristics of each animal. The following are typical:

Chases kitty up a tree.
Eats hickory nuts.
Makes sweet honey.
Has a long neck.
Has a long trunk.
Has pink eyes.
Gives sweet milk.

The necessary pictures of animals may be cut from magazines, or the children may make silhouettes. Stand the pictures on the blackboard ledge. Flash the cards describing the animals in rapid succession. Let the pupils reach quickly for the pictures as the phrase cards are flashed. For example, when the teacher flashes the card bearing the phrase, "eats hickory nuts," the pupils rush for the picture of a squirrel. When the pictures are all taken, the pupil who has the greatest number is declared the winner.

The tendency to emulate. The impulse of emulation is exhibited by the child in his expressions, "Watch me," "See me do it." He instinctively likes to show his prowess, his mastery over things. Nor is this trait confined to grade pupils only. High-school and college students are often not modest in announcing their achievements. The cardinal virtue of emulation is that the child strives to excel or to master a situation because of the satisfaction derived from the activity or

conquest itself. He strives to reach some goal, to surpass his own record. Rivalry with one's own record of growth is a commendable attitude.

The practical application of this instinctive tendency to emulate is seen when the pupil tabulates and charts his daily or weekly records made in the speed and accuracy drills and tests in reading. Charting his daily progress may be an artificial incentive. However, it often stimulates the pupil to greater effort, as well as to an inquiry as to why he suffered lapses in some of the records. The impulse to excel the achievements of others in one's own class or in other grades is known as rivalry. Rivalry is social; it requires competitors.

Often the speed and accuracy in reading of pupils in a certain grade is equal or superior to that of those in the grade immediately above. The authors recall having a sixth-grade class that often made a higher class average in speed and comprehension than did the seventh-grade rivals. Again, there is such great overlapping in the reading abilities of pupils in the grades that it is not unusual for the brighter third of a fourth-grade class to excel the lower third or average pupils of the fifth grade. Comparing the scores made by pupils within a grade, or comparing the scores of those in consecutive grades, will often appreciably motivate an interest in reading. Rivalry should always be kept within reasonable limits. When ill-feeling or unfair tactics develop among the pupils, the use of rivalry as an incentive is to be condemned.

Devices based on inherent traits. Focusing the pupil's attention upon reading, especially upon the drill exercises, is absolutely imperative if economical results are to be achieved. The supplementary reading exercises suggested in Chapter XII will yield returns largely to the degree that pupil focalization is secured. But how can this group consciousness be assured? Possibly one of the most effective devices is to arouse a spirit of competition by dividing the class into two groups, of as nearly equal reading ability as possible. A class division in which the girls are pitted against the boys usually stimulates every member to greater effort. In all drills and tests, however, only one or two of the better pupils on each side will have a chance to score, unless some system of weighted points is used. If there is a class of ten or more, the first four who get the answer right should receive credit for their sides. For example, the one who first holds up his hand scores four points for his side (providing he is right); the second, three points; the third, two points; the fourth, one point. Such weighting of scores insures almost undivided attention and 100 per cent participation.

Arousing competition by using tests. Keen competition in reading may be aroused by comparing average scores in rate and comprehension made by classes of the same grade throughout the whole school system. Many supervisors give reading tests at stated intervals, then record and chart the results for each grade throughout the system. Mimeographed reports show-

ing comparative rankings are then sent to all grades concerned. Such reports show the average class score compared with the reading standard for the grade and with the score of other classes. When the spirit of fair play and sympathetic co-operation are present, such scientific methods of supervision and standardization are very valuable.

In one-room schools and small-town schools having but one class in each grade, it usually produces an exhilarating effect to compare not only the class averages of one grade with those of the grade immediately above, but to compare the scores of pupils in one grade with those of pupils in the next one or two grades above. Often a few of the better pupils in the fourth grade make a score in rate and comprehension higher than that of some of the poorer pupils in the eighth grade who are tested over the same reading material. When such friendly comparisons are made, the question often becomes that of determining how rapidly and well the pupils of the respective grades really should read.

Standards of achievement. In this chapter we have emphasized the necessity of having the child focus on what he attempts to do. But upon what particular thing shall he focus? Have we any accurate scientific instrument which will demonstrate to the pupil in what school achievements he is deficient? If such a measuring rod could be devised, would it not be of intrinsic value to pupil and teacher? They could then co-operate in making a drive upon the objectives not yet realized.

The standardized test as a measure of achievement. Standardized tests are based on the principle of definiteness. They are instruments for definitely and reliably measuring certain skills and abilities that the pupil has acquired. If a pupil wishes to know whether his rate of reading and his ability to comprehend are up to standard, he may determine this reasonably well by taking the examinations provided by a few reading tests and scales. He may thus discover for himself what detrimental factors operate to lower his score. By means of the standardized test he takes stock of his assets and liabilities. Focalization upon specific aims now becomes possible. The principle of maximum reward for minimum effort is able to function. This attitude of scientific approach to all problems and the careful appraisal of them are of inestimable value to the pupil during his school life and in later years.

We may well ask what values accrue to the teacher from a use of standardized tests. Not so long ago her rating was largely determined by the whims or personal opinions of her supervisors. If, when an official visit was made to her room, the pupils seemed very much interested in their work, the room cheerful, and the teacher artfully gracious, she might reasonably expect a mark of "good" or "superior" in the superintendent's estimation. The fact that she was superior in teaching skill, that she helped pupils discover their difficulties, and then scientifically remedied their shortcomings, was no factor in the appraisal of her ability.

The determination of goals. Research in the field of education is making it possible to determine by means of standardized tests of intelligence and achievement, the probable goals or limits that each pupil should realize in each subject for any particular year. Whenever this theory comes to determine practice, then teacher, parent, and pupil will definitely know at the beginning of the year what achievements should be forthcoming. The pupil's integrity of effort and the teaching skill of the teacher will thus be measured in terms of results produced, instead of in terms of opinionated statements.

Monroe says:[1]

The teacher is a manufacturer. The raw material is the children. Textbooks, school buildings, equipment, libraries, and methods and devices of teaching are the "machines" or instruments which he uses to change this raw material into the finished product or educated boys and girls who are prepared to do their part in the life of the community, state, and nation. Without definite aims the teacher cannot plan his work effectively. He does not know, except in an indefinite or general way, what he is to do. If he has definite aims, but no instruments for measuring his results accurately, he cannot learn when he has attained his aims. Thus he is compelled to work in the dark. If he makes inaccurate measurements, but considers them accurate, he is in a still more serious situation. His efforts are almost certain to be expended unwisely.

The teacher-made tests. There are not enough reliable standardized tests in any subject even to consider

[1]Monroe, W. S. *Measuring the Results of Teaching.* Houghton Mifflin Company, Boston, 1918.

their taking the place of the teacher's quizzes and tests. Standardized tests should be used to supplement, but never to supplant the teacher's examinations.

Good testing is good teaching. If a thing is worth teaching it is worth testing. Children live in the present. Often some of the essentials in a certain subject become distasteful to the pupil. The business of the school is to see that he becomes educated, even in spite of himself. However, it is possible to create in most pupils a desire to be tested. If the child sees that the test is his means of determining accurately how much he has achieved on his problem, and just what part of the job is yet to be done, he will be convinced that this frequent test or inventory is his ally instead of his foe. He will often demand a test over an assignment before he reads it, so as to know definitely where to direct his attack. Whether he plans to save time and energy, or to acquire as much information as possible with minimum effort, the test is his most reliable and scientific method of approach. He will learn to regard it as a challenge to his preparation. It often is the spirit in which the test is given, rather than the test itself, that brings discord and makes some testing of doubtful value. The value of both the standardized and teacher-made tests as sources of motivating power is apparent. These tests show the pupils where they are weak, and develop the mental set necessary for intensive drill exercises.

In previous chapters we have said that interest must

be present in drill work if it is to be effective. We are now ready for the other half of the truth, namely, that one must know definitely where the drill is needed and how much of it is necessary. Too much energy of both pupils and teachers has too long been dissipated in drill work, not so much because interest was wanting, but because there was no focus upon the specific needs of the individual child. Often children are annoyed with reading, spelling, and arithmetic exercises which they have known for days. It is through the test that teacher and pupil get a correct estimate of the values and aims not yet accomplished.

The value of charting results. Too often both standardized and teacher-made tests are given without making results known to the pupils. The inspiration and interest which these tests would naturally foster is lost. "After testing, what?" is a very searching question now being asked by school men, and especially by members of finance boards that must arrange to pay the bills. It is not within the province of this chapter to attempt an answer to this question which has occasioned the writing of some splendid books. Invariably, a close analysis of the results of these tests suggests a change or broadening of the course of study to meet individual needs, as well as a revaluation of several elements both spiritual and material within the school. But there is yet another inherent virtue that may evolve from the testing of pupils, namely, the awakening and sustaining of a genuine interest for greater

achievement. This may be realized in several ways, but the one to be discussed here considers briefly the efficiency of tabulating and charting the results of tests.

Most pupils are keenly interested in knowing just where they stand with reference to some standardized test for their grade, or how their standing compares with that of other pupils in their class. Graphing the scores or achievements of pupils as an incentive to excellence is psychologically sound practice. It appeals to the impulses of rivalry, emulation, and social approval. Many of the large mercantile houses send weekly reports to their salesmen in the form of graphs, which are only comparative scores of sales made.

Now and then there may be a pupil who is not affected by a daily comparison of his scores with those of his classmates, but there is rarely one who is not more or less interested in charting and studying his own progress from day to day, once he makes the start and becomes interested. Having the scores of the whole class charted weekly and compared with the standard for that grade enables the teacher to measure the success of her own efforts. It is at least one scientific device which she can employ to measure the probable effectiveness of her methods. The charts are silent reminders to pupils and teachers of standards yet to be attained. Perhaps no better argument can be urged for charting pupils' scores than that each child can see his own daily progress, can watch himself grow. It is good practice to have each student record and

chart his own achievement from time to time. His impulse to excel then centers on surpassing his previous daily or weekly record, rather than excelling that of some classmate.

Methods of charting. Two methods of charting are advised. (1) Making records and charts for the class as a whole, (2) recording and charting each pupil's scores. The latter work should be done by the pupil himself so that he may study his own progress and become interested in diagnosing his own difficulties.

Charting class progress. The group chart shows the achievements or scores of the whole class in comparison with the universal standard for that particular grade. Pupils can see at a glance what portion of their class is up to average or above. This chart also enables them to make comparisons of the work of individuals. Names of pupils should not appear on the chart because those who have low scores may be needlessly humiliated by such publicity. Each child should be designated by a number, known only to teacher and pupil, as shown in Fig. 5.

The chart shown on the opposite page indicates the comprehension scores made by a class of seventh-grade pupils in a consolidated school who were measured by the Thorndike-McCall *Reading Scale: Form 6.* As shown by the vertical bars, three pupils are below the standard for the fifth grade, eight below that for the sixth grade, twelve below that for the seventh grade, and one is above the seventh-grade standard.

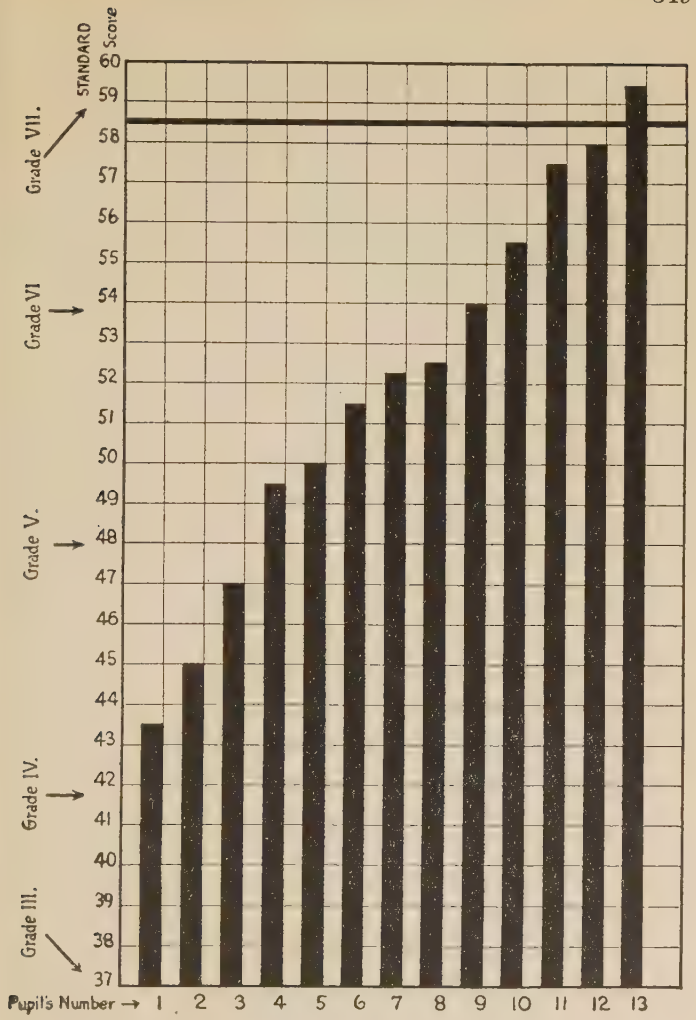

FIGURE 5. (*See the explanation on page* 348.)

Making a group chart once a week is often enough in most schools. Paper is not necessary. Often better results are obtained if a conspicuous place on the blackboard is set aside for showing the weekly class standing. The use of colored crayons gives such a chart or record a tone that is worth while. Pupils should draw the scale and help construct the diagram. Such work is a valuable experience for them and motivates an interest in the test.

At least two charts should be made for every group. One should show the rate of reading and the other the comprehension scores. Standardized tests may be used to determine progress, but if those are not available the teacher may select an appropriate lesson and have the pupils read it through once, keeping check on their time. The teacher should give a test on the content and take the class average as a standard.

Individual progress during a given period may be shown as the chart (Fig. 6) on the opposite page indicates. This chart shows the comprehension scores made by a class of seventh-grade pupils measured by the Thorndike-McCall *Reading Scale: Form 7.* The vertical black bars are the same as those shown in Fig. 5. The open bars represent the increased reading ability of the pupils. In addition to the regular assignments these pupils were given specific drill exercises ten minutes daily for twenty days. Thought-getting drills were also emphasized.

If paper is used for the chart it is best to rule it

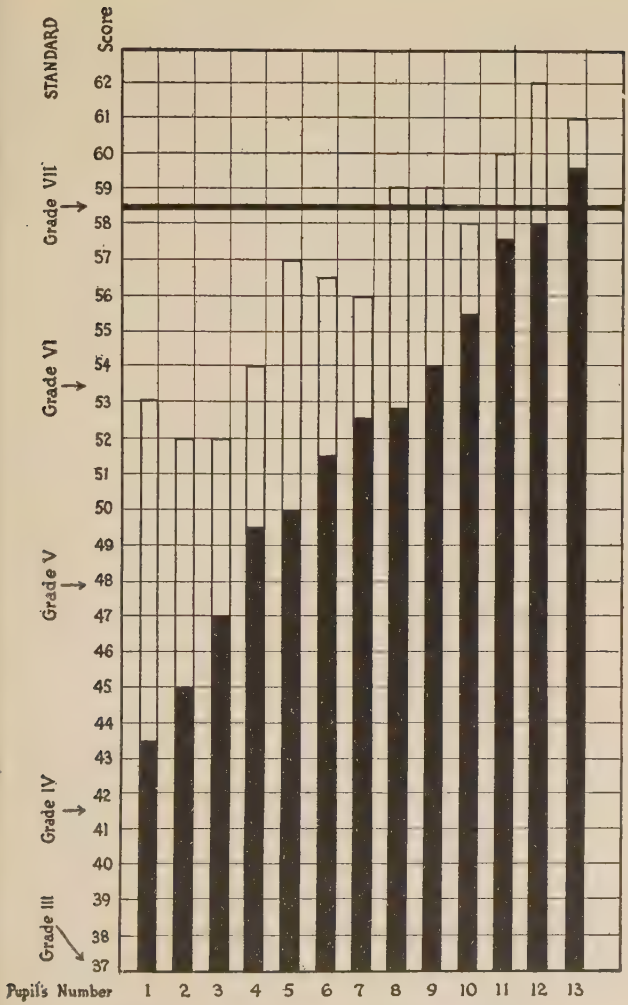

FIGURE 6. (*See the explanation on page* 350.)

off into one-inch squares. Show the points, scores, or per cent of achievement of the pupils on the vertical axis; place the numbers representing the names on the horizontal axis. The universal standard to which the grade should attain should be indicated by a very heavy horizontal line near the top of the chart. (See Figs. 5 and 6.)

Charting individual progress. The individual chart should have as many squares on the horizontal axis as there are school days in the month, if the pupil is to plot his daily progress. The vertical length of the chart will be determined by the number of points, scores, or per cent allowed to each square. The chart should usually be long enough to show the daily gains or losses rather conspicuously.

As already noted, each pupil becomes more interested in his own progress than that of his classmates. This gives its value to the individual chart. Often, in the rural school, there is only one pupil in a grade. In such cases, rivalry within the class is obviously impossible. However, if the pupil becomes interested in tabulating and graphing his reading scores in speed and comprehension, he will be watching himself grow. He will occasionally be annoyed that his records vary from day to day, that he even fails to equal the achievements of the preceding week. Often a spirit of genuine inquiry is stimulated by the pupil's attempt to account for these plateaus, peaks, and valleys in his reading curve. Although class rivalry may be lacking because

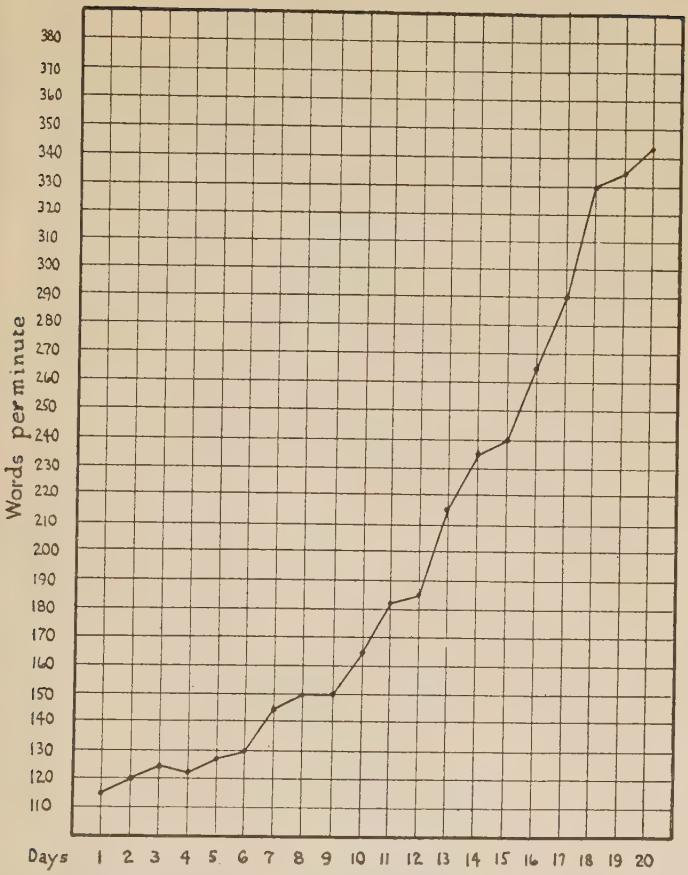

FIGURE 7. An individual chart. The scores indicated represent the progress made in reading rate during a period of twenty days in which speed drills were given for ten minutes per day.

of lack of numbers, the most wholesome kind of rivalry, — an attempt to beat one's own record, — may nevertheless operate. Thus the results that obtain from using standardized tests in rural schools are quite as valuable as those that accrue when those tests are used in town and city schools.

SUMMARY

1. A rich course of study, a good library, definite assignments, broad reading, scientific methods, and drill exercises produce effective study habits.
2. Pupils must be genuinely interested and they must know where their attention should be focused.
3. Psychological doctrine gives a basis for drill work.
4. Pupil-motivation should be emphasized in all drills.
5. The teacher must not overlook the value of instinctive tendencies in drill work.
6. Teachers should use devices based on inherent traits.
7. Focalization upon specific needs arouses the child's interest.
8. Teacher-made tests, which are valuable and necessary, are not second in importance to standardized tests.
9. Charting results creates interest in reading and serves as a diagnostic device for both teacher and pupils.

SUGGESTED READINGS

Alexander, Carter. *School Statistics and Publicity.* Silver, Burdett and Company, Chicago, 1919.

Colvin, S. S. and Bagley, W. C. *Human Behavior.* (Chapters 3 to 11.) The Macmillan Company, New York City, 1918.

Colvin, S. S. *The Learning Process.* (Chapters 3, 4, 17, 18, 19.) The Macmillan Company, New York City, 1920.

Dewey, John. *Interest and Effort in Education.* Houghton Mifflin Company, Boston, 1913.

Dewey, John and Evelyn. *Schools of Tomorrow.* E. P. Dutton and Company, New York City.

APPENDIX

A. PAMPHLETS SUITABLE FOR USE AS READING MATERIAL

The following pamphlets are suitable for use as reading material as outlined in the plans given on pages 246-249. In asking for a supply of this material teachers should write directly to the sources indicated. Publications of the United States Government may be obtained by addressing the Superintendent of Documents, United States Bureau of Engraving and Printing, Washington, D. C.

FARM BULLETINS (Issued by the United States Department of Agriculture.)

No.

535 Sugar and Its Value as Food
565 Corn Meal as a Food: Ways of Using It
567 Sugar-beet Growing Under Irrigation
602 The Production of Clean Milk
606 The Collection and Preservation of Insects and Other Material in the Study of Agriculture
607 The Farm Kitchen as a Workshop
609 Bird Houses and How to Build Them
630 Common Birds Useful to the Farmer
637 The Grasshopper Problem and Alfalfa Culture
653 Honey and Its Use in the Home
660 Weeds. How to Control Them
670 Field Mice as Farm and Orchard Pests
691 Grasshoppers—Sugar Beets and Truck Crops
697 Duck Raising
702 Rabbits in Relation to Trees and Crops
712 School Lunches
734 Fly Traps and Their Operation
744 The Preservative Treatment of Farm Timbers
747 Grasshoppers and Their Control
808 How to Select Foods: I. What the Body Needs

817 How to Select Foods: II. Cereal Foods
824 Foods Rich in Protein

BULLETINS OF THE CHILDREN'S BUREAU OF THE UNITED STATES DEPARTMENT OF LABOR

No.
8 Infant Care (*Care of Children Series No. 2.*)
Baby-saving Campaigns (*Infant Mortality Series No. 1.*)
35 Milk: Indispensable for Children (*Care of Children Series No. 4.*)
36 Save 100,000 Babies: Get a Square Deal for Children
47 The Public Health Nurse: How She Helps to Keep Babies Well

BULLETINS OF THE CONNECTICUT STATE DEPARTMENT OF HEALTH (Hartford, Connecticut)

How to Avoid Tuberculosis
Diphtheria
Scarlet Fever

BULLETINS OF THE VIRGINIA STATE DEPARTMENT OF HEALTH (Richmond, Virginia)

No.
5 The Sanitary School
6 Bluebird Day
7 First Aid
19 Fresh Air
27 The Best Weapon Against Flies
36 The Drinking Cup

BULLETINS OF THE INTERNATIONAL HARVESTER COMPANY'S AGRICULTURAL EXTENSION DEPARTMENT (Chicago)

Humus: The Life of the Soil
Helps for Wash Day
Cold-pack Canning
We Must Feed Ourselves
The Story of Bread

B. BOOKS SUGGESTED FOR USE IN GRADES I, II, AND III

The following list of titles was made by members of a

class in the College of Education at Des Moines University, who were working on the problem, "Appropriate Reading Material for the Primary Grades." Although the list is not, of course, exhaustive, it includes such titles as are recommended for a place in the reading library of the first, second, and third grades. Teachers will find that the books mentioned contain interesting, wholesome, and practical material suitable for the ordinary library. In several instances a title appears in more than one list because the subject-matter of the book is suitable for use in several grades.

The numbers in parentheses following the titles correspond to those appearing on pages 376-378, and indicate the names and addresses of the publishing firms from which the respective books may be obtained.

GRADE I

Alexander, Georgia: *Child Classics* (*9*)
Baker and Thorndike: *Every Day Classics* (*34*)
Brooke, Leslie L.: *Johnny Crow's Party* (*62*)
Johnny Crow's Garden (*62*)
Burchill, Georgine: *Story Steps* (*51*)
Progressive Road to Reading (*51*)
Caldecott, R.: *Panjandrum Picture Book* (*62*)
Hey Diddle Picture Book (*62*)
Coe and Christy: *Story Hour Reader* (*2*)
Story Hour Primer (*2*)
Craik, G. M.: *Bow-Bow and Mew-Mew* (*35*)
So-Fat and Mew-Mew (*35*)
Dressel, H. and others: *The New Barnes Readers* (*6*)
Dyer and Brady: *The Merrill Primer* (*35*)
Merrill First Reader (*35*)
Edson and Laing: *Edson-Laing Primer* (*47*)
Edson-Laing First Reader (*47*)
Elson and Runkel: *The Elson Primer* (*48*)
The Elson First Reader (*48*)
Field, W. T.: *The Field Primer* (*21*)
Firman and Maltby: *The Winston Primer* (*59*)
The Winston First Reader (*59*)

Fox, F. M.: *Indian Primer* (*20*)
Mother Goose Primer (*42*)
Adventures of Sonny Bear (*43*)
Free and Treadwell: *Reading-Literature Primer* (*46*)
Reading-Literature First Reader (*46*)
Greenway, K.: *Marigold Garden* (*62*)
Under the Window (*62*)
Grover and Chutter: *Art-Literature* (*4*)
McManus and Haaren: *Natural-Method Readers: Primer* (*49*)
Natural-Method Readers: First Reader (*49*)
Potter, Beatrix: *Tales of Peter Rabbit* (*57*)
Little Black Sambo (*44*)
Raymond, MacDonald, and Alden: *Why the Chimes Rang* (*9*)
Searson and Martin: *Primer* (*55*)
First Reader (*55*)
Serl and Evans: *Work-a-day Doings* (*51*)
Work-a-day Doings on the Farm (*51*)
Silvester and Peters: *Happy Hour Stories* (*2*)
Young and Field: *Literary Readers* (*21*)

GRADE II

Adelberg, Otilla: *Clean Peter* (*29*)
Bannermann, Helen: *Little Black Sambo* (*44*)
Bayliss, Clara: *Lolami, the Little Cliff Dweller* (*41*)
Bigham, Madge A.: *Mother Goose Village* (*43*)
Merry Animal Tales (*28*)
Blaisdell, M. F.: *Tommy Tinker's Book* (*28*)
Brown, A. F.: *The Lonesomest Doll* (*25*)
Burchill, Georgine: *Progressive Road to Reading: Book II* (*51*)
Burgess, Thornton: *Old Mother West Wind* (*28*)
Grandfather's Frog (*28*)
Johnny Chuck (*28*)
Coe and Christy: *Story Hour Reader* (*2*)
Deming, T. O.: *Little Indian Folk* (*53*)
Little Red People (*53*)
Dopp, K.: *The Tree Dwellers* (*43*)
Early Cave Men (*43*)

Dressel, H. and others: *The New Barnes Readers* (*6*)
Edson and Laing: *Edson-Laing Second Reader* (*47*)
Faulkner, Georgene: *Italian Fairy Tales* (*13*)
Old Russian Tales (*13*)
Firman and Maltby: *The Winston Readers* (*59*)
Free and Treadwell: *Reading-Literature Second Reader* (*46*)
Greenway, Kate: *Marigold Garden* (*62*)
Pied Piper (*62*)
Grover, Eulalie: *Kittens and Cats* (*25*)
The Overall Boys in Switzerland (*43*)
The Sunbonnet Babies in Holland (*43*)
Hall, Jennie: *Weavers and other Workers* (*43*)
Lang, A.: *The Princess on the Glass Hill* (*29*)
Jack the Giant Killer (*29*)
Jack and the Bean Stalk (*29*)
Lefevre, Felicite: *The Cock, the Mouse, and the Hen* (*1*)
Lucia, Rose: *Peter and Polly in Summer* (*2*)
McManus and Haaren: *Natural-Method Readers: Book II* (*49*)
Morcomb, Margaret: *Red Feather Stories* (*31*)
Perkins, Lucy F.: *The Eskimo Twins* (*25*)
The Japanese Twins (*25*)
Potter, Beatrix: *Tales of Peter Rabbit* (*57*)
Pyle, K.: *In the Green Forest* (*28*)
Careless Jane (*17*)
Seachrest, E.: *Greek Photo Plays* (*43*)
Searson and Martin: *Second Reader* (*55*)
Serl, Emma: *In Fableland* (*51*)
Weimer, Teresa: *Chats in the Zoo* (*43*)
White, E. O.: *Brothers in Fur* (*25*)
Williston, T. P.: *Japanese Fairy Tales* (*43*)
Young and Field: *Literary Reader: Book II* (*21*)

GRADE III

Bailey, Carolyn S.: *For the Children's Hour* (*15*)
Baldwin, J.: *Fifty Famous Stories Retold* (*2*)
Hero Tales Told in School (*49*)
Fairy Stories and Fables (*2*)
Baum, Frank: *The Wizard of Oz* (*44*)

Bigham, Madge A.: *Merry Animal Tales* (*28*)
Blaisdell, M. F.: *Polly and Dolly* (*28*)
Brooks, D.: *Stories of the Red Children* (*19*)
Brown, A. F.: *The Christmas Angel* (*25*)
The Lonesomest Doll (*25*)
Bryce, Catherine: *That's Why Stories* (*37*)
Burgess, Thornton: *Grandfather's Frog* (*28*)
Adventures of Reddy Fox (*28*)
Adventures of Paddy the Beaver (*28*)
Adventures of Old Mr. Toad (*28*)
Bedtime Story-book (*28*)
Mother West Wind's Why Stories (*28*)
Mrs. Peter Rabbit (*28*)
Old Mother West Wind (*28*)
Old Mother West Wind's Animal Stories (*28*)
Old Mother West Wind's Neighbors (*28*)
Carpenter, F. G.: *Around the World with the Children* (*2*)
Stories Pictures Tell: Books II and III (*43*)
Carroll, Lewis: *Through the Looking Glass* (*1*)
Coe and Christy: *Story Hour Reader* (*2*)
Davidson and Anderson: *Lincoln Third Reader* (*26*)
Doheny, M. A.: *A Dramatic Reader for the Third School Year* (*28*)
Dutton, M. B.: *In Field and Pasture* (*2*)
Eggleston, E.: *Great Americans for Little Americans* (*2*)
Faulkner, Georgene: *Old English Nursery Tales Retold* (*13*)
Christmas Stories (*13*)
Firman and Maltby: *Winston Third Reader* (*59*)
Free and Treadwell: *Reading-Literature Series: Book III* (*46*)
Grimm, J. K. and W. K.: *Fairy Tales* (*1*)
Hardy, M. E.: *Nature's Wonder Lore* (*43*)
Husted, Mary H.: *Stories of Indian Children* (*41*)
Ingelow, Jean: *Mopsa the Fairy* (*17*)
Kipling, Rudyard: *Just-So Stories* (*16*)
Lang, A.: *Princess on the Glass Hill* (*29*)
The Sleeping Beauty (*29*)
Pretty Goldilocks (*29*)
The Snow Man (*29*)

Lucia, Rose: *Peter and Polly in Autumn* (2)
Peter and Polly in Spring (2)
Peter and Polly in Summer (2)
Peter and Polly in Winter (2)
McManus and Haaren: *Natural-Method Reader: Book III* (49)
McMurry, L. B.: *Classic Stories for Little Ones* (41)
Malory, Sir Thomas: *Story of King Arthur's Knights* (34)

Morcomb, Margaret: *Red Feather Stories* (31)
Muller, Mary: *Little People of Japan* (20)
Mullock, Maud: *The Little Lame Prince* (27)
The Adventures of a Brownie (27)
Olmstead, E. G.: *Ned and Nan in Holland* (46)
Peary, J. B.: *Children of the Arctic* (53)
Perkins, Lucy F.: *The Snow Baby* (25)
The Japanese Twins (25)
The Eskimo Twins (25)
The Puritan Twins (25)
Pyle, K.: *The Christmas Angel* (28)
As the Goose Flies (28)
The Counterpane Fairy (17)
Ruskin, John: *The King of the Golden River* (21)
Scudder, H. E.: *Fables and Folk Stories* (25)
George Washington (25)
Seachrest, E.: *Greek Photo Plays* (43)
Egyptian Photo Plays (43)
Searson and Martin: *Third Reader* (55)
Shillig, E. E.: *The Four Wonders: Cotton, Wool, Linen, Silk* (43)
Smith, M. E.: *Holland Stories* (43)
Stevenson, R. L.: *Child's Garden of Verses* (49)
Terry, A. G.: *Tales from Far and Near* (46)

C. BOOKS SUGGESTED FOR USE IN GRADES IV AND V

The following list of titles, compiled by Mary L. Perham, appeared in the December (1921) number of the *Elementary School Journal.* Some titles which originally appeared in this list have been included in other lists of this Appendix

and are consequently omitted here. Concerning this list the compiler says:

The following lists of books are the result of an attempt during the past two years to discover the worth-while books that children of the fourth and fifth grades actually enjoy reading. Each list provides for the difference in taste and age found in the average group of forty or fifty children of the grades for which they are indicated. Only those books which the children themselves have expressed pleasure in reading are included.

GRADE IV

Bailey, Margery: *Seven Peas in the Pod* (*28*)
Beson, Henry: *Firelight Fairy Book* (*5*)
Blaisdell, A. F.: *American History for Little Folks* (*28*)
Brown, A. F.: *Star Jewels* (*25*)
Brown and Bell: *Tales of the Red Children* (*3*)
Bryce, Catherine T.: *Folklore from Foreign Lands* (*37*)
Fables from Afar (*37*)
Bryce, Marion: *Nancy in the Woods* (*61*)
Carpenter, F. G.: *Around the World with the Children* (*2*)
Carroll, Lewis: *Alice's Adventures in Wonderland* (*34*)
Through the Looking Glass (*34*)
Chambers, R. H.: *Hide and Seek in Forest Land* (*3*)
Colum, Padraic: *Boy Who Knew What the Birds Said* (*34*)
Craik, Mrs. D. M.: *Little Lame Prince* (*24*)
Curtin, Jeremiah: *Fairy Tales of Eastern Europe* (*32*)
Dickinson, A. D.: *Children's Book of Thanksgiving Stories* (*16*)
Dunton, Larkin: *Glimpses of the World* (*51*)
Farmer, Florence V.: *Boy and Girl Heroes* (*34*)
Ghosh, Prince: *Wonders of the Jungle* (*24*)
Gibson, C. C.: *In Eastern Wonderlands* (*28*)
Hall, Jennie: *Viking Tales* (*43*)
Hallock, E. B.: *In Those Days* (*34*)
Hopkins, W. J.: *Sand Man: His Farm Stories* (*39*)
Sand Man: His Sea Stories (*39*)
Howells, W. D.: *Christmas Every Day* (*23*)
Jacobs, J. (Editor): *Celtic Fairy Tales* (*42*)
English Fairy Tales (*42*)

Johnson, Clifton: *Oak-tree Fairy Book* (*28*)
Birch-tree Fairy Book (*28*)
Elm-tree Fairy Book (*28*)
Judd, Mary C.: *Classic Myths* (*43*)
Jusdon, K. B.: *Old Crow Stories* (*28*)
Lagerlöf, Selma: *Wonderful Adventures of Nils* (*16*)
Lucia, Rose: *Stories of American Discoverers* (*2*)
Mace, W. H.: *Primary History* (*43*)
Martin and Davis: *Firebrands* (*28*)
McDonald and Dalrymple: *Uné San in Japan* (*28*)
Marta in Holland (*28*)
Joseph in Spain (*28*)
Hassan in Egypt (*28*)
Betty in Canada (*28*)
Donald in Scotland (*28*)
Gerda in Sweden (*28*)
McMurry and Cook: *Songs of Tree-top and Meadow* (*41*)
Morley, M. W.: *Little Mitchell* (*33*)
Moseley, M. W.: *Donkey John of the Toy Valley* (*33*)
Mulets, Lenore: *Sunshine Lands of Europe* (*60*)
Nixon-Roulet, M. F.: *Our Australian Cousin* (*39*)
Otis, James: *Mary of Plymouth* (*2*)
Page, Thomas Nelson: *Captured Santa Claus* (*49*)
Perkins, F. O. (Editor): *Peter Pan* (*51*)
Porter, B. C.: *Wonder Oak* (*18*)
Pratt, M. L.: *Legends of the Red Children* (*2*)
Pyle, Howard: *Twilight Land* (*23*)
Garden Behind the Moon (*49*)
Pyle, Katherine: *In the Green Forest* (*28*)
Christmas Angel (*28*)
Counterpane Fairy (*17*)
Richards, L. E.: *Pig Brother* (*28*)
Scandlin, Christiana: *Hans the Eskimo* (*51*)
Schwartz, J. A.: *Little Star Gazers* (*53*)
Sherman, F. D.: *Little Folk Lyrics* (*25*)
Shillig, Elnora E.: *Four Wonders* (*43*)
Shute and Dunton: *Land of Song: Book I* (*51*)
Smith, E. Boyd: *Farm Book* (*25*)

Smith and Hazeltine: *Christmas in Legend and Story* (30)
Snell, Roy J.: *Little White Fox* (28)
Stone and Fickett: *Days and Deeds a Hundred Years Ago* (24)
Everyday Life in the Colonies (24)
Usher, R. G.: *Stories of the Pilgrims for Children* (34)
Wade, Mary H.: *Our Norwegian Cousin* (39)
Coming of the White Men (58)
White, E. O.: *Little Girl of Long Ago* (25)
Wiggins and Smith: *Posy Ring* (16)
Magic Casements (16)
Wilmot-Buxton, E. M.: *Stories of Norse Heroes* (12)

GRADE V

Aanrud, Hans: *Lisbeth Longfrock* (21)
Alden, R. M.: *Why the Chimes Rang* (9)
Asbjörnsen, P. C.: *Fairy Tales of the Far North* (67)
Baldwin, James: *The Old Northwest* (2)
Blaisdell and Ball: *Story of American History* (21)
Pioneers of America (28)
Heroic Deeds of American Sailors (28)
Branch, M. L. B.: *Guld, the Cavern King* (50)
Brooks, E. S.: *True Story of Benjamin Franklin* (30)
True Story of Lincoln (30)
Brown, Frances: *The Wonderful Chair* (24)
Browne, G. W.: *Two American Boys in Hawaii* (71)
Bryant, S. C.: *I am an American* (25)
Bullen, F. T.: *Cruise of the Cachalot* (66)
Burgess, Thornton: *Burgess Animal Book* (28)
Bird Book for Children (28)
Burnett, F. H.: *Little Lord Fauntleroy* (49)
Little Princess (49)
Burt, M. E.: *Poems Every Child Should Know* (16)
Chamberlain, J. F. and A. H.: *Africa* (34)
Europe (34)
North America (34)
South America (34)
Coe, F. E.: *Makers of the Nation* (2)
Founders of Our Country (2)

Colum, Padraic: *Adventures of Odysseus and the Fall of Troy* (*34*)
Curtis, Alice T.: *Little Maid of Bunker Hill* (*40*)
Little Maid of Massachusetts Colony (*40*)
Little Maid of Narragansett Bay (*40*)
Little Maid of Old Philadelphia (*40*)
Little Maid of Provincetown (*40*)
Davis, J. W. (Editor): *Pinocchio Under the Sea* (*34*)
Deming and Bemis: *Stories of Patriotism* (*25*)
Dickinson, H. W. and A. D.: *Children's Book of Patriotic Stories* (*16*)
Eastman, C. A. and E. G.: *Smoky Day's Wigwam Evenings* (*28*)
Eastman, E. G.: *Indian Legends Retold* (*28*)
French, Allen: *Heroes of Iceland* (*28*)
Story of Rolf (*28*)
Ghosh, Prince: *Wonders of the Jungle: Books I and II* (*24*)
Gordy, W. F.: *American Leaders and Heroes* (*49*)
Grenfell, W. T.: *Adrift on the Ice* (*25*)
Griffith, A. M.: *Stars and Their Stories* (*63*)
Haaren and Poland: *Famous Men of Modern Times* (*2*)
Hallock, E. B.: *In Those Days* (*34*)
Hancock, M. S.: *Children in History* (*Early Times*) (*28*)
Hawkins, C. J.: *Little Red Doe* (*28*)
Hawthorne, Nathaniel: *Wonder Book* (*25*)
Hudson, W. H.: *Little Boy Lost* (*70*)
Hyde, L. S.: *Favorite Greek Myths* (*24*)
Johnson, Clifton: *Fir-tree Fairy Book* (*28*)
Kaler, J. O.: *The Life Savers* (*17*)
Lang, A.: *Green Fairy Book* (*29*)
Blue Fairy Book (*29*)
Larkin, Shute, and Duncan: *Land of Song: Book II* (*51*)
Lefferts, Walter: *American Leaders: Books I and II* (*27*)
Lofting, Hugh: *Story of Dr. Doolittle* (*53*)
Martin and Davis: *Firebrands* (*28*)
McFee, Inez: *Boys and Girls of Many Lands* (*12*)
McMurry, C. A.: *Pioneers of the Mississippi Valley* (*34*)
Mills, E. A.: *Story of a Thousand Year Pine* (*25*)

Molesworth, M. L. S.: *Cuckoo Clock* (27)
Christmas Tree Land (34)
Carrots (34)
Nixon-Roulet, M. F.: *Our Brazilian Cousin* (39)
Olcott, F. J.: *Arabian Nights* (63)
Story-telling Poems (25)
Ouida: *Moufflon* (27)
A Dog of Flanders (27)
Page, T. N.: *Two Little Confederates* (49)
Paine, Albert B.: *Arkansaw Bear* (1)
Parkman, M. R.: *Heroes of Today* (11)
Perkins, L. F.: *Mexican Twins* (25)
French Twins (25)
Perkins, F. O. (Editor): *Children's Bluebird* (51)
Pyle, Howard: *The Wonderful Clock* (23)
Riis, Jacob: *Hero Tales of the Far North* (34)
Schultz, J. W.: *Sinopah, the Indian Boy* (25)
Quest of the Fish-dog Skin (25)
Schwartz, Julia: *Wilderness Babies* (28)
Seton-Thompson, E.: *Wild Animals I Have Known* (49)
Sewell, Anna: *Black Beauty* (64)
Sherman, F. D.: *Little Folk Lyrics* (25)
Sidney, Margaret: *Five Little Peppers* (30)
Smith, M. P. W.: *Stories of Old Deerfield* (28)
Jolly Good Times on a Farm (28)
Jolly Good Times at Hackmatack (28)
Boy Captive in Canada (28)
Spyri, Johanna: *Moni, the Goat Boy* (21)
Heimatlos (21)
Stein, Evaleen: *Gabriel and the Hour Book* (39)
Stimpson, M. S.: *Child's Book of American Biography* (28)
Stocking, J. T.: *The City That Never Was Reached* (65)
Stone and Fickett: *Everyday Life in the Colonies* (24)
Days and Deeds a Hundred Years Ago (24)
Tappan, E. M.: *Robin Hood: His Book* (28)
Little Book of the Flag (25)
American Hero Stories (25)
Tileston, Mary W.: *Child's Harvest of Verse* (28)

Wade, Mary: *Twin Travelers in South America* (*53*)
Leaders to Liberty (*28*)
Wesselhoeft, L. F.: *Jack, the Fire Dog* (*28*)
Laddie, the House Dog (*28*)
White, S. E.: *Magic Forest* (*34*)
Whittier, J. G.: *Child Life* (*25*)
Yard, T. S.: *Top of the Continent* (*49*)

D. SUPPLEMENTARY READING MATERIAL FOR GRADES IV TO VIII

The following titles are suggestive of a type of reading material which gives much information on several of the content subjects usually studied in grades four to eight, inclusive. This list is part of a bibliography prepared by a group of superintendents and grade principals who were working with the authors on the problem, "Supplementary Reading Materials for the Intermediate and Upper Grades." Many valuable suggestions were derived from Bobbitt's article, "Reading in the Elementary Schools of Indianapolis: Part V. — The Reading Materials"[1] and from Hartman's book, *The Child and His School.*[2]

HISTORY AND CIVICS

Austin, O. P.: *Uncle Sam's Secrets* (*3*)
Baldwin, James: *Old Stories of the East* (*2*)
Fifty Famous Stories Retold (*2*)
Old Greek Stories Retold (*2*)
Bayliss, C. H.: *Lolami, the Little Cliff Dweller* (*41*)
Beard and Bagley: *History of American People* (*34*)
Chase, A.: *Children of the Wigwam* (*19*)
Church, A. J.: *Stories of the Old World* (*21*)
Coffin, C. C.: *Old Times in the Colonies* (*23*)
Dutton, M. B.: *Little Stories of Germany* (*2*)
Eastman, C. A.: *Indian Boyhood* (*16*)
Indian Child Life (*28*)
Wigwam Evenings (*28*)

[1]Bobbitt, Franklin. "Reading in the elementary schools of Indianapolis: Part V. — The reading materials." *Elementary School Journal*, Vol. 19, (May) 1919.
[2]Hartman, Gertrude. *The Child and His School.* E. P. Dutton and Company, New York City, 1922.

Eggleston, E.: *Stories of American Life and Adventure* (2)
Finnemore, A. J.: *Story of Robin Hood and His Merry Men* (34)
Frye, Jane: *The Young American Readers* (59)
Gordy, W. F.: *Stories of American Explorers* (49)
American Beginnings in Europe (49)
Griffis, W. E.: *Young People's History of Holland* (25)
Guerber, H. A.: *Story of the Chosen People* (2)
Story of the Thirteen Colonies (2)
Story of the English (2)
Story of France (2)
Hall, J.: *Men of Old Greece* (28)
Hart, A. B.: *Colonial Children* (34)
Hawthorne, Nathaniel: *Grandfather's Chair* (25)
Johnson and Spencer: *Ireland's Story* (25)
Kingsley, Charles: *The Heroes* (17)
Lang, Andrew: *True Story-book* (29)
Red True Story-book (29)
Longfellow, H. W.: *Miles Standish* (12)
Evangeline (9)
McIntyre, M. A.: *The Cave Boy of the Age of Stone* (3)
McMurry, C. A.: *Pioneer History Series* (34)
Moore, C. W.: *Life of Abraham Lincoln for Boys and Girls* (25)
Morris, Charles: *Historical Tales: Greek* (27)
Historical Tales: Roman (27)
Historical Tales: Russian (27)
Heroes of Progress in America (27)
Home Life in All Lands: Vol. II (27)
Parkman, Francis: *Montcalm and Wolfe* (28)
Oregon Trail (34)
Rivals for America (28)
Reynolds, M. J.: *How Man Conquered Nature* (34)
Roosevelt, Theodore: *Winning of the West* (42)
Tappan, Eva M.: *Story of the Roman People* (25)
American Hero Stories (25)
Terry, A. G. (Editor): *History Stories of Other Lands,* **6** *Vols.* (46)

Waterloo, S.: *The Story of Ab* (*16*)
Wilson and Driggs: *The White Indian Boy* (*60*)

GEOGRAPHY

Allen, N. B.: *Geographical and Industrial Studies: South America* (*21*)
Bishop and Keller: *Commercial and Industrial Geography* (*21*)
Blaich, Lydia R.: *Three Industrial Nations* (*2*)
Brigham, A. P.: *From Trail to Railway* (*21*)
Bullen, F.: *Cruise of the Cachalot* (*3*)
Butler, E. C.: *Our Little Mexican Cousin* (*2*)
Carpenter, F. G.: *How the World Is Clothed* (*2*)
How the World Is Housed (*2*)
How the World Is Fed (*2*)
Chamberlain, J. F.: *How We Are Clothed* (*34*)
How We Are Fed (*34*)
How We Are Sheltered (*34*)
How We Trade (*34*)
Darwin, C. R.: *Voyage of the Beagle* (*3*)
Dasent, G. W.: *East o' the Sun and West o' the Moon* (*42*)
Dodge, M. M.: *The Land of Pluck* (*11*)
Doubleday, R.: *Year in a Yawl* (*16*)
Finnemore, John: *Peeps at Many Lands: England* (*34*)
Peeps at Many Lands: Switzerland (*34*)
Peeps at Many Lands: Japan (*34*)
Jonckheere, R.: *When I was a Boy in Belgium* (*30*)
Jungman, B.: *Peeps at Many Lands: Holland* (*34*)
Krout, M. H.: *Alice's Visit to the Hawaiian Islands* (*2*)
McDonald and Dalrymple: *Little People Everywhere Series* (*28*)
Mitchell, A. F.: *Paz and Pablo* (*60*)
Muller, M.: *Elsbeth: A Story of German Home Life* (*17*)
Peary, J.: *Children of the Arctic* (*53*)
Price, O. W.: *The Land We Live In* (*52*)
Rocheleau, W. F.: *Geography of Commerce and Industry* (*19*)
Schwatka, F.: *Children of the Cold* (*19*)
Shaw, R. E.: *Big and Little People of Other Lands* (*2*)

Spyri, Johanna: *Heidi* (2)
Stockton, F. R.: *Personally Conducted* (49)
Thomson, M. P.: *Peeps at Many Lands: Denmark* (34)

COMMERCE AND INDUSTRY

Allen, N. B.: *Industrial Studies: Europe* (21)
Bassett, S. W.: *The Story of Sugar* (40)
The Story of Wool (40)
The Story of Porcelain (40)
The Story of Glass (40)
Bogart, Ernest: *Economic History of the United States* (29)
Bolton, Sarah K.: *Lives of Girls Who Became Famous* (12)
Lives of Poor Boys Who Became Famous (12)
Famous Men of Science (12)
Burns, E. E.: *Story of Great Inventions* (23)
Butler, F. O.: *The Story of Paper Making* (10)
Bond, Alexander R.: *With Men Who Do Things* (36)
Brooks, E. C.: *The Story of Cotton* (43)
Carpenter, F. O.: *Foods and Their Uses* (49)
Casson, H. N.: *History of the Telephone* (33)
Chase and Clow: *Stories of Industry: Vol. II* (19)
Cooke, A. O.: *A Day with Leather Workers* (38)
A Visit to a Cotton Mill (38)
A Visit to a Coal Mine (38)
A Day in a Shipyard (38)
Doubleday, Russel: *Stories of Inventors* (16)
Dunham, E.: *Jogging Around the World* (53)
DuPuy, W. A.: *Uncle Sam's Modern Miracles* (53)
Forman, S. E.: *Stories of Useful Inventions* (11)
Grey, Z.: *The Young Forester* (23)
Hall, G. S.: *The Story of a Sand Pile* (6)
Howe, W. D.: *Making a Capital in the Wilderness* (9)
Keller and Bishop: *Commercial and Industrial Geography* (21)
Kinne and Cooley: *Shelter and Clothing* (34)
Kipling, Rudyard: *Captains Courageous* (16)
Kirby, M. and E.: *Aunt Martha's Corner Cupboard* (19)
Lane, M. A.: *Industries of Today* (21)
Laut, A. C.: *The Story of the Trapper* (3)

Martin, E. A.: *The Story of a Piece of Coal* (*3*)
Morgan, J. H.: *Boy Electrician* (*27*)
Mowry, A. M.: *Captains of Industry* (*51*)
Parker, E. P.: *Petroleum and Its Uses* (*Series C 1918*) (*68*)
Rocheleau, W. F.: *Great American Industries: Vol. II* (*20*)
Geography of Commerce and Industry (*19*)
Samuel, I.: *The Story of Iron* (*40*)
The Story of Gold and Silver (*40*)
Smith, J. R.: *Iron and Steel* (*Series C*) (*68*)
Tappan, E. M.: *Makers of Many Things* (*25*)
Travellers and Travelings (*25*)
Diggers in the Earth (*25*)
The Farmer and His Friends (*25*)
Towne, E. C.: *The Story of Money* (*14*)
Tower, W. S.: *The Story of Oil* (*3*)
Warman, C. Y.: *The Story of the Railroad* (*3*)

E. LITERARY SELECTIONS: FOR BOYS AND GIRLS FROM 10 TO 15 YEARS OF AGE

It is believed that the books listed on this and the following pages will be found as interesting to boys and girls as the vicious dime novel and at the same time afford them clean, inspiring, and wholesome reading material. The list was selected from *Books for Older Boys and Girls* edited by Ruth G. Hopkins, Head of Children's Department, Bridgeport (Connecticut) Public Library. The authors are deeply indebted to Miss Linn Jones, Head of the Childrens' Library of the city of Des Moines, for her co-operation in selecting those books which are most in demand by the boys and girls of that city.

This list is suggestive of the type of reading material that is safe and wholesome for older children to read. Teachers and parents who wish to add interesting selections to the children's library can obtain wholesome information by consulting *The Bookshelf for Boys and Girls*, published by R. R. Bowker, New York City, and by reading Clara Whitehill Hunt's book, *What Shall We Read to the Children*, published by Houghton Mifflin Company, Boston.

Alcott, Louisa May: *Jack and Jill* (*28*)
Little Women (*28*)
Aldrich, T. B.: *Story of a Bad Boy* (*25*)
Altsheler, J. A.: *The Horsemen of the Plains* (*66*)
The Last of the Chiefs (*66*)
Ames, J. B.: *Torrance from Texas* (*11*)
Amers, J. B.: *The Mystery of Ram Island* (*11*)
Under Boy Scout Colors (*66*)
Ashmun, M. E.: *Heart of Isabel Carleton* (*34*)
Isabel Carleton at Home (*34*)
Baker, Olaf: *Shasta of the Wolves* (*69*)
Barbour, R. H.: *For the Honor of the School* (*66*)
Bates, K. L.: *In Sunny Spain* (*17*)
Bond, A. R.: *Pick, Shovel, and Pluck* (*36*)
Brooks, E. S.: *Master of the Strong Hearts* (*17*)
Brooks, Noah: *The Boy Emigrants* (*49*)
Brown, A. F.: *In the Days of Giants* (*25*)
Brown, Helen D.: *Two College Girls* (*25*)
Brown, Edna A.: *When Max Came* (*30*)
Brownell, Agnes: *Thankful Spicers* (*49*)
Clemens, S. L. (Mark Twain): *Prince and the Pauper* (*23*)
Adventures of Huckleberry Finn (*23*)
Collins, A. F.: *The Book of Stars* (*3*)
Colum, Padraic: *Children of Odin* (*34*)
Adventures of Odysseus and Tales of Troy (*34*)
Coolidge, Susan: *What Katy Did at School* (*28*)
Cooper, J. F.: *The Spy* (*42*)
Daulton, Agnes: *From Sioux to Susan* (*11*)
Deland, E. D.: *Oakleigh* (*23*)
Dix, Beulah M.: *Betty-Bide-At-Home* (*63*)
Doubleday, R.: *Cattle Ranch to College* (*66*)
Drysdale, William: *The Fast Mail* (*58*)
DuChaillu, Paul: *Wild Life under the Equator* (*23*)
Eggleston, G. C.: *Long Knives* (*30*)
Bale Marked Circle X (*30*)
French, H. W.: *Lance of Kanana* (*30*)
French, Allen: *Story of Rolf and the Viking's Bow* (*28*)
Gaines, Ruth: *Treasure Flower* (*17*)

Gregor, Elmer R.: *Red Arrow* (*23*)
Running Fox (*3*)
Hagedorn, H.: *Boys' Life of Roosevelt* (*23*)
Hale, Lucretia: *Peterkin Papers* (*25*)
Hale, Edward E.: *Man Without a Country* (*28*)
Hall, A.: *Carpentry and Mechanics for Boys* (*30*)
Hawes, C. B.: *The Mutineers* (*5*)
Heyliger, Wm.: *Don Strong of the Wolf Patrol* (*66*)
Off Side (*3*)
High Benton (*3*)
Hill, F. T.: *On the Trail of Washington* (*3*)
On the Trail of Grant and Lee (*3*)
Hurd, Marian K., and Jean B. Wilson: *When She Came Home from College* (*25*)
Inman, Col. H.: *The Ranch on the Oxhide* (*66*)
Jackson, Helen H.: *Nelly's Silver Mine* (*28*)
Jacobs, C. D.: *Texas Blue Bonnet* (*39*)
Keeler, Harriet: *Our Native Trees and How to Identify Them* (*49*)
Macdonald, G.: *At the Back of the North Wind* (*27*)
Macdonald, G.: *Princess and the Goblin* (*27*)
Princess and Curdie (*27*)
Masefield, J.: *Martin Hyde* (*28*)
Meadowcroft, Wm.: *Boys' Life of Edison* (*23*)
Meigs, Cornelia: *Fool of Stars* (*34*)
Miller, O. T.: *The First Book of Birds* (*25*)
The Second Book of Birds (*25*)
Moffett, C.: *Careers of Danger and Daring* (*11*)
Montgomery, L. M.: *Anne of Green Gables* (*39*)
Morgan, A. P.: *Boys' Book of Science and Construction* (*30*)
Page, T. N.: *Two Little Confederates* (*49*)
Paine, A. B.: *Boys' Life of Mark Twain* (*23*)
Perkins, L. F.: *Cornelia* (*25*)
Pyle, Howard: *Garden Behind the Moon* (*49*)
Jack Ballister's Fortunes (*11*)
Men of Iron (*23*)
Otto of the Silver Hand (*49*)
Merry Adventures of Robin Hood (*49*)

Rankin, C. W.: *Dandelion Cottage* (*63*)
Rogers, J. E.: *The Tree Guide* (*16*)
Rold-Smith, N. G.: *Faerie Queen* (*17*)
Rolt-Wheeter, F.: *The Boy with the U. S. Foresters* (*30*)
Roosevelt, Theodore: *Stories of the Great West* (*11*)
Sabin, E. L.: *Buffalo Bill and the Overland Trail* (*27*)
Schultz, J. W.: *The War Trail Fort* (*25*)
Schultz, J. W.: *Running Eagle, the Warrior Girl* (*25*)
Lone Bull's Mistake (*66*)
Rising Wolf, the White Blackfoot (*25*)
With the Indians in the Rockies (*25*)
Shafer, D. C.: *Harper's Beginning Electricity* (*23*)
Stevenson, B. E.: *Tommy Remington's Battle* (*66*)
Stevenson, R. L.: *Treasure Island* (*3*)
Tolman, A. W.: *Jim Spurling, Fisherman* (*23*)
Tomlison, E. T.: *Scouting with Daniel Boone* (*66*)
Scouting with Kit Carson (*66*)
Vaile, Charlotte: *Orcutt Girls* (*58*)
Wallace, Dillon: *Ungava Bob* (*66*)
Troop One of the Labrador (*45*)
Washington, B. T.: *Up from Slavery* (*67*)
Zwilgmeyer, Dikken: *What Happened to Inger Johanne* (*30*)

F. LIST OF PUBLISHERS

Books mentioned in the bibliographies on the preceding pages may be obtained from the publishers listed below. Teachers can obtain full information regarding any title by asking for a catalogue and descriptive literature which publishers are always glad to supply. A perusal of publishers' catalogues is a good means of acquainting oneself with the annual production of books for children.

1.	Henry Altemus and Company	Philadelphia
2.	American Book Company	New York City
3.	D. Appleton and Company	New York City
4.	Atkinson, Mentzer and Company	Chicago
5.	Atlantic Monthly Press	Boston
6.	A. S. Barnes and Company	New York City

7.	The Beckley-Cardy Company	Chicago
8.	Bloch Publishing Company	New York City
9.	The Bobbs-Merrill Company	Indianapolis
10.	Butler Paper Company	Chicago
11.	The Century Company	New York City
12.	T. Y. Crowell and Company	New York City
13.	Daughaday and Company	Chicago
14.	Dillingham and Company	New York City
15.	M. A. Donohue and Company	Chicago
16.	Doubleday, Page and Company	Garden City, N. Y.
17.	E. P. Dutton and Company	New York City
18.	Eaton and Mains (Abingdon Press)	Chicago
19.	Educational Publishing Company	Boston
20.	A. Flanagan and Company	Chicago
21.	Ginn and Company	Boston
22.	Griffith and Rowland Press (American Baptist Publication Society)	Philadelphia
23.	Harper and Brothers	New York City
24.	D. C. Heath and Company	Boston
25.	Houghton Mifflin Company	Boston
26.	Laurel Book Company	Chicago
27.	J. B. Lippincott and Company	Philadelphia
28.	Little, Brown and Company	Boston
29.	Longmans, Green and Company	New York City
30.	Lothrop, Lee and Shepard Company	Boston
31.	Lyons and Carnahan	Chicago
32.	Robt. M. McBride and Company	New York City
33.	A. C. McClurg and Company	Chicago
34.	The Macmillan Company	New York City
35.	Chas. E. Merrill and Company	New York City
36.	Munn and Company	New York City
37.	Newson and Company	New York City
38.	Oxford University Press (American Branch)	New York City
39.	The Page Company	Boston
40.	Penn Publishing Company	Philadelphia
41.	Public School Publishing Company	Bloomington, Ill.
42.	G. P. Putnam's Sons	New York City

43.	Rand, McNally and Company	Chicago
44.	The Reilly and Lee Company	Chicago
45.	F. H. Revell and Company	New York City
46.	Row, Peterson and Company	Chicago
47.	Benj. H. Sanborn and Company	Chicago
48.	Scott, Foresman and Company	Chicago
49.	Chas. Scribner's Sons	New York City
50.	Sherman, French and Company	Boston
51.	Silver, Burdett and Company	Chicago
52.	Small, Maynard and Company	Boston
53.	Frederick A. Stokes and Company	New York City
54.	E. Thompson and Company	Northport, N. Y.
55.	University Publishing Company	Lincoln, Nebraska
56.	Frederick Warne and Company	New York City
57.	Albert Whitman and Company	Chicago
58.	W. A. Wilde and Company	Boston
59.	J. C. Winston and Company	Philadelphia
60.	World Book Company	Yonkers, N. Y.
61.	John Lane Company	New York City
62.	Frederick K. Warne and Company	New York City
63.	Henry Holt and Company	New York City
64.	George W. Jacobs and Company	Philadelphia
65.	Pilgrim Press	Boston
66.	Grosset and Dunlap	New York City
67.	A. L. Burt and Company	New York City
68.	United States Bureau of Education	Washington, D. C.
69.	Dodd, Mead, and Company	New York City
70.	Alfred A. Knopf	New York City
71.	Dana Estes Company	Boston

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